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2018 KNOX COUNTY COMMUNITY HEALTH ASSESSMENT



Photo by Sam Miller



Photo by Scott Swingle

Examining the health of Knox County, Ohio
Released July 2018
Knox Health Planning Partnership

Foreword

The Knox Health Planning Partnership is pleased to present the 2018 Knox County Community Health Assessment. This comprehensive community health assessment is the result of a strong partnership between dedicated community partners who work together to improve the health and well-being of Knox County residents.

The Knox Health Planning Partnership (KHPP) conducted its first health assessment in 2011. The Knox Health Planning Partnership designed its first community health improvement plan (CHIP), as a result of the first health assessment. This community health improvement plan serves as a planning tool to reduce health disparities and improve health status of residents throughout Knox County. This process of conducting a community Health Assessment and, subsequently, designing a community health improvement plan has continued year after year, with 2018 being no exception.

By conducting a health assessment, we are able to understand, comprehensively, the health and wellness of Knox County residents. The data presented in this report will provide tangible information which will enable KHPP to develop strategies related to the prioritized health needs in our community. Through collaboration with the Hospital Council of Northwest Ohio (HCNO) and public health researchers at the University of Toledo, we have made every effort to assure that this report contains valid and reliable data.

In addition to this quantitative data collected through the health assessment, qualitative data gathered from community focus groups will be included in this report. In partnership with Kenyon College, focus groups were conducting among community members, including area teens, to discuss what residents perceive as community health issues and how to initiate grassroots, community-wide efforts to remedy those issues.

Five Knox County health improvement priorities will be determined so that our partners across Knox County can work collaboratively to align their resources to address the identified disparities and prioritized their strategies based on areas of need.

As we review the results of the 2018 Community Health Assessment, the members of the Knox Health Planning Partnership will continue to work collaboratively to identify unmet needs in our community. It is the hope of the coalition that this assessment will serve as a valuable tool to assist us in our efforts to improve the health and well-being of Knox County residents. It is also our hope that this assessment will foster new collaborative opportunities and initiate quality programs to improve the lives of Knox County residents.

Sincerely,

A handwritten signature in blue ink that reads "Julie Miller". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Julie Miller, RN, MSN
Health Commissioner

Acknowledgements

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Knox County Health Department
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Knox County Board of Developmental Disabilities
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Knox County Chamber of Commerce
YMCA of Mount Vernon
The Freedom Center
Sanctuary Community Action

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To see Knox County data compared to other counties, please visit the Hospital Council of Northwest Ohio's Data Link website at:

<http://www.hcno.org/community-services/data-link/>

The 2018 Knox County Community Health Assessment is available on the following websites:

Hospital Council of Northwest Ohio

<http://www.hcno.org/community-services/community-health-assessments/>

Kenyon College Cox Health & Wellness Center

<http://www.kenyon.edu/student-life/health-counseling/>

Knox County Health Department

<http://www.knoxhealth.com/>

Knox Community Hospital

<https://www.kch.org/>

Mental Health and Recovery of Licking & Knox Counties

<http://www.mhrlk.org/>

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Executive Summary

This executive summary provides an overview of health-related data for Knox County adults (ages 19 and older) who participated in a county-wide health assessment survey from January to March 2018. The findings are based on self-administered surveys using a structured questionnaire. The questions were modeled after the survey instrument used by the Centers for Disease Control and Prevention (CDC) for their national and state Behavioral Risk Factor Surveillance System (BRFSS). The Hospital Council of Northwest Ohio (HCNO) collected the data, guided the health assessment process, and integrated sources of primary and secondary data into the final report.

Primary Data Collection Methods

DESIGN

This community health assessment was cross-sectional in nature and included a written survey of adults within Knox County. From the beginning, community leaders were actively engaged in the planning process and helped define the content, scope, and sequence of the study. Active engagement of community members throughout the planning process is regarded as an important step in completing a valid needs assessment.

INSTRUMENT DEVELOPMENT

One survey instrument was designed and pilot tested for adults in this study. As a first step in the design process, health education researchers from the University of Toledo and staff members from HCNO met to discuss potential sources of valid and reliable survey items that would be appropriate for assessing the health status and health needs of adults. The investigators decided to derive the majority of the survey items from the BRFSS. This decision was based on being able to compare local data with state and national data.

The project coordinator from HCNO conducted a series of meetings with the planning committee from Knox County. During these meetings, HCNO and the planning committee reviewed and discussed banks of potential survey questions from the BRFSS survey. Based on input from Knox County, the project coordinator composed a draft of the survey containing 110 items for the survey. Health education researchers from the University of Toledo reviewed and approved the draft.

SAMPLING | Survey

The sampling frame for the survey included adults ages 19 and older living in Knox County. The 2010 U.S. Census Bureau reported there were 45,130 persons ages 19 and older living in Knox County. The investigators conducted a power analysis to determine what sample size was needed to ensure a 95% confidence level with a corresponding margin of error of 5% (i.e., we can be 95% sure that the “true” population responses are within a 5% margin of error of the survey findings). A sample size of at least 381 adults was needed to ensure this level of confidence. A random sample of mailing addresses of adults from Knox County was obtained from Melissa Global Intelligence in Rancho Santa Margarita, California.

PROCEDURE | Survey

Prior to mailing the survey, an advance letter was mailed to 1,200 adults in Knox County. This advance letter was personalized, printed on Knox Health Planning Partnership stationery and signed by Julie Miller, Health Commissioner of the Knox County Health Department. The letter introduced the assessment project and informed the readers that they may be randomly selected to receive the survey. The letter also explained that the respondents’ confidentiality would be protected, and it encouraged the readers to complete and return the survey promptly if they were selected.

Two weeks following the advance letter, the project team implemented a three-wave mailing procedure to maximize the survey return rate. The initial mailing included a personalized hand signed cover letter (on Knox Health Planning Partnership stationery) describing the purpose of the study, a questionnaire, a self-addressed stamped return envelope, and a \$2 incentive, which were all included in a large blue envelope. Approximately two weeks after the first-wave mailing, the project team proceeded with a second-wave mailing encouraging recipients to reply, which included another copy of the questionnaire and an additional reply envelope. The third and final wave consisted of a postcard that was mailed two weeks after the second wave mailing. Surveys returned as undeliverable were not replaced with another potential respondent.

The response rate for the entire mailing was 38% (n=392: CI= \pm 4.83). This return rate and sample size means that the responses in the health assessment should be representative of the entire county.

DATA ANALYSIS

Individual responses were anonymous. Only group data was available. All data was analyzed by health education researchers at The University of Toledo using SPSS 23.0. Crosstabs were used to calculate descriptive statistics for the data presented in this report. To be representative of Knox County, the adult data collected was weighted by age, gender, race, and income using 2016 Census data. Multiple weightings were created based on this information to account for different types of analyses. For more information on how the weightings were created and applied, see Appendix III.

LIMITATIONS

As with all county health assessments, it is important to consider the findings in light of all possible limitations. First, the Knox County adult assessment had a high response rate. However, if any important differences existed between the respondents and the non-respondents regarding the questions asked, this would represent a threat to the external validity of the results (the generalizability of the results to the population of Knox County). If there were little to no differences between respondents and non-respondents, then this would not be a limitation.

It is important to note that although several questions were asked using the same wording as the Centers for Disease Control and Prevention (CDC) questionnaires, the data collection method differed. The CDC adult data was collected using a set of questions from the total question bank, and participants were asked the questions over the telephone rather than through a mailed survey.


Caution should be used when interpreting subgroup results, as the margin of error for any subgroup is higher than that of the overall survey.

Secondary Data Collection Methods

HCNO collected secondary data from over 50 websites, including county-level data, wherever possible. HCNO utilized sites such as the Ohio Department of Health database, Behavioral Risk Factor Surveillance System (BRFSS), numerous CDC sites, The United States Census Bureau, American Community Survey, American Cancer Society, American Diabetes Association, Healthy People 2020, County Health Rankings, Job & Family Services (Individual & Family Services), among other sources. Most secondary data is from 2014-2016. All primary data collected in this report is from the 2018 Knox County Community Health Assessment. All other data will be sourced accordingly.

2016 Ohio State Health Assessment (SHA)

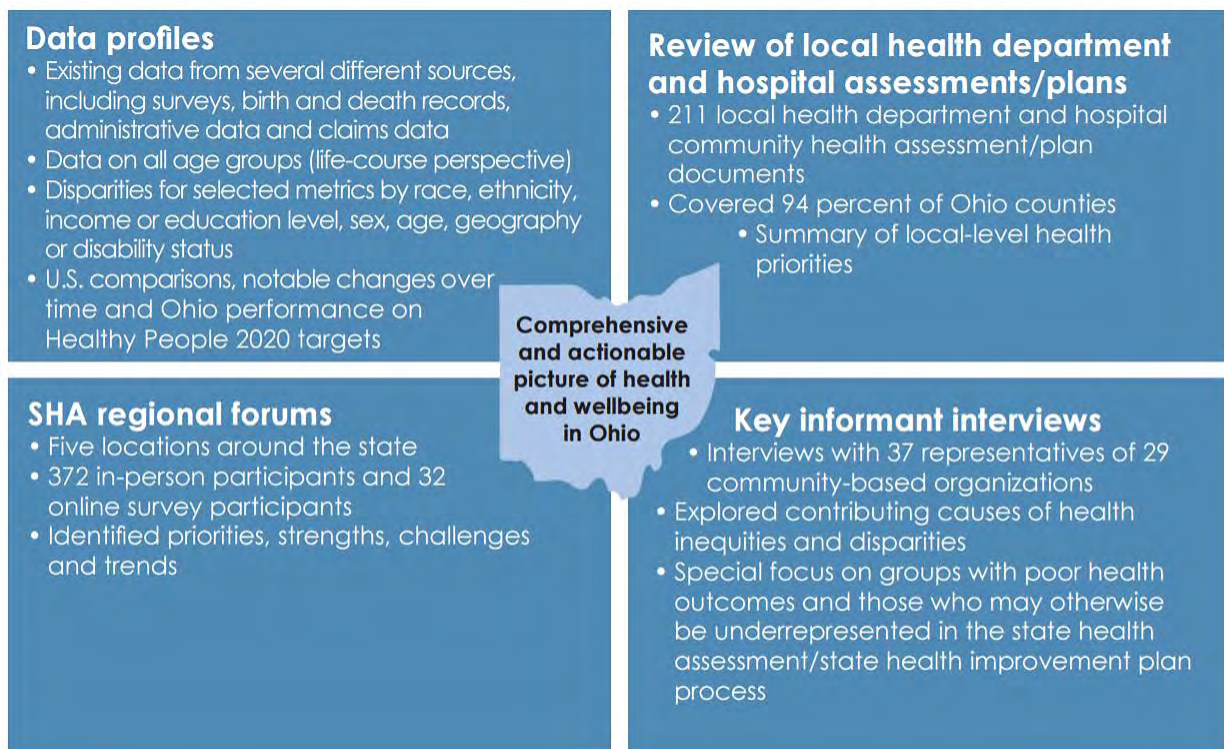
The 2016 Ohio State Health Assessment (SHA) provides data needed to inform health improvement priorities and strategies in the state. This assessment includes more than 140 metrics, organized into data profiles, as well as information gathered through five regional forums, a review of local health department and hospital assessments and plans, and key informant interviews.

Similar to the 2016 Ohio SHA, the 2018 Knox County Community Health Assessment (CHA) examined a variety of metrics from various areas of health, including health behaviors, chronic disease, access to health care, and social determinants of health. Additionally, the CHA studied themes and perceptions from local public health stakeholders from a wide variety of sectors. **Note: This symbol  will be displayed in the trend summary when an indicator directly aligns with the 2016 Ohio SHA.**

The interconnectedness of Ohio's greatest health challenges, along with the overall consistency of health priorities identified in this assessment, indicates many opportunities for collaboration among a wide variety of partners at and between the state and local level, including physical and behavioral health organizations and sectors beyond health. It is Healthy Knox County's hope that this CHA will serve as a foundation for such collaboration.

To view the full 2016 Ohio State Health Assessment, please visit: http://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/chss/ship/SHA_FullReport_08042016.pdf?la=en

FIGURE 1.1 | State Health Assessment (SHA) Sources of Information

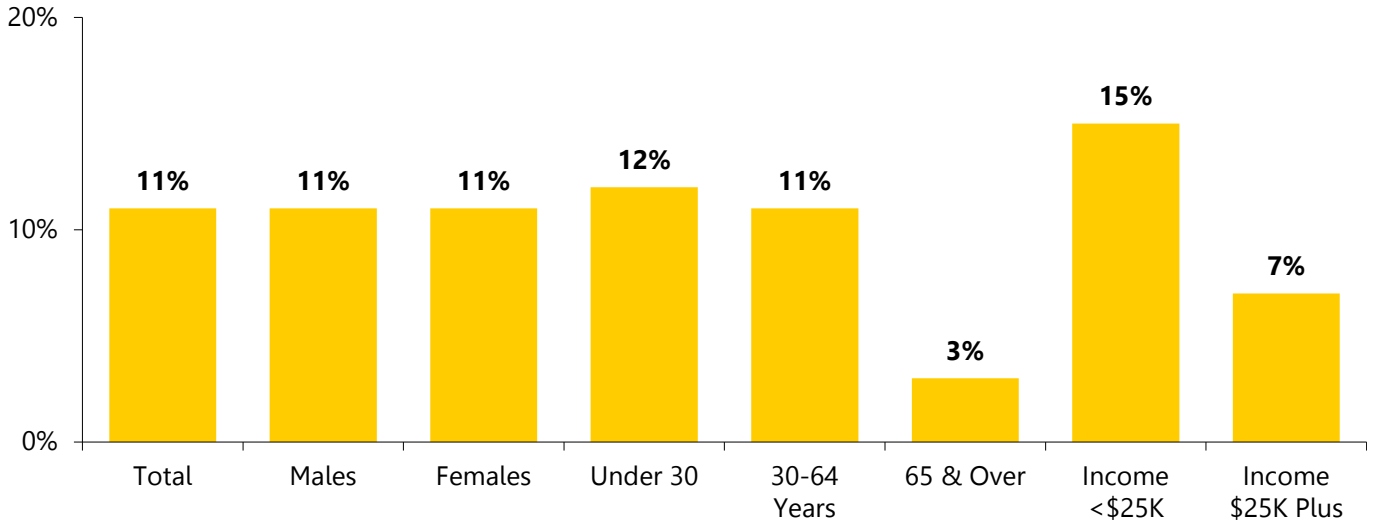


Data Summary

HEALTHCARE COVERAGE

In 2018, 11% of Knox County adults were without healthcare coverage, increasing to 15% of those with incomes less than \$25,000.

Uninsured Knox County Adults

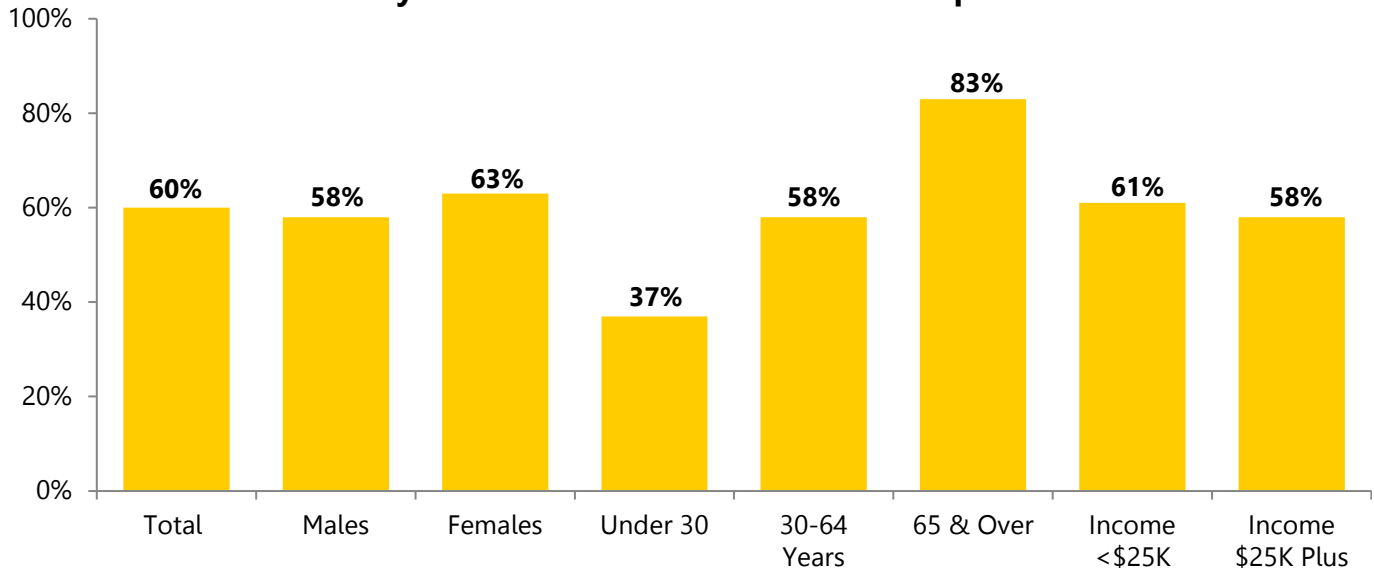


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ACCESS AND UTILIZATION

In 2018, 60% of Knox County adults had visited a doctor for a routine checkup. Almost three-fifths (59%) of adults went outside of Knox County for healthcare services in the past year.

Knox County Adults Who Had a Routine Check-up in the Past Year



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

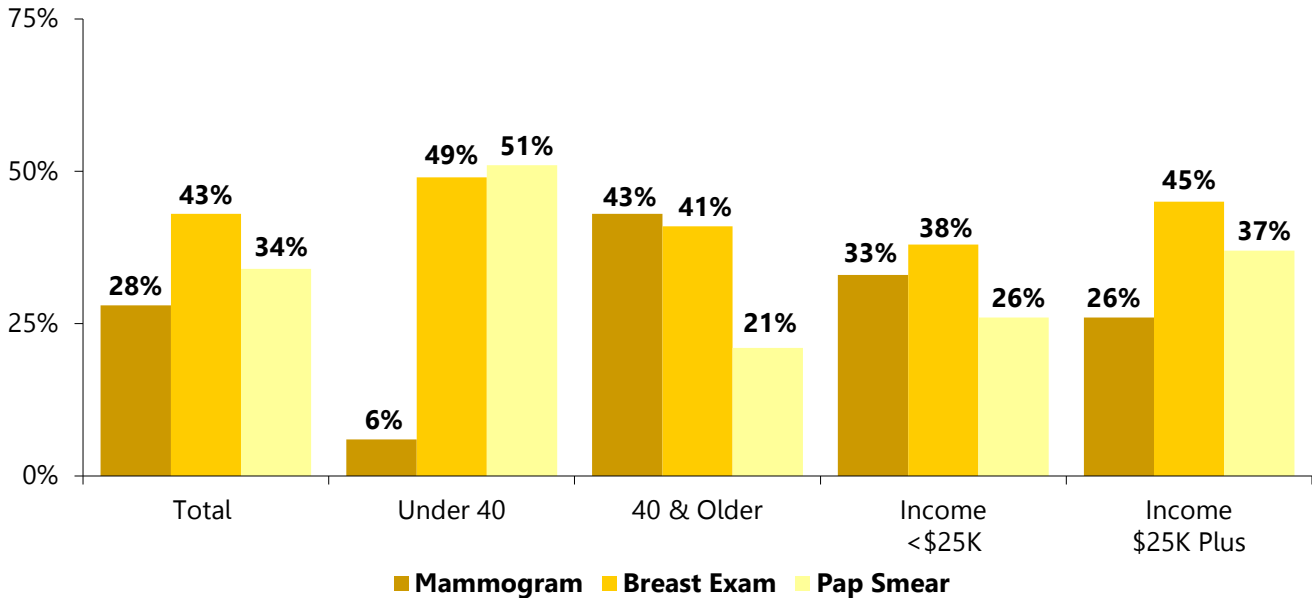
PREVENTIVE MEDICINE

More than half (57%) of Knox County adults were at risk for high blood pressure based on family history. More than one-third (36%) of adults discussed family history with their healthcare provider in the past year.

WOMEN'S HEALTH

In 2018, more than two-fifths (43%) of Knox County women ages 40 and older reported having a mammogram in the past year. Forty-three percent (43%) of Knox County women ages 19 and older had a clinical breast exam and 34% had a Pap smear to detect cancer of the cervix in the past year. Five percent (5%) of women survived a heart attack and 1% survived a stroke at some time in their life. Nearly two-fifths (39%) were obese, 34% had high blood cholesterol, 32% had high blood pressure, and 17% were identified as smokers, all of which are known risk factors for cardiovascular diseases.

Knox County Women's Health Exams Within the Past Year

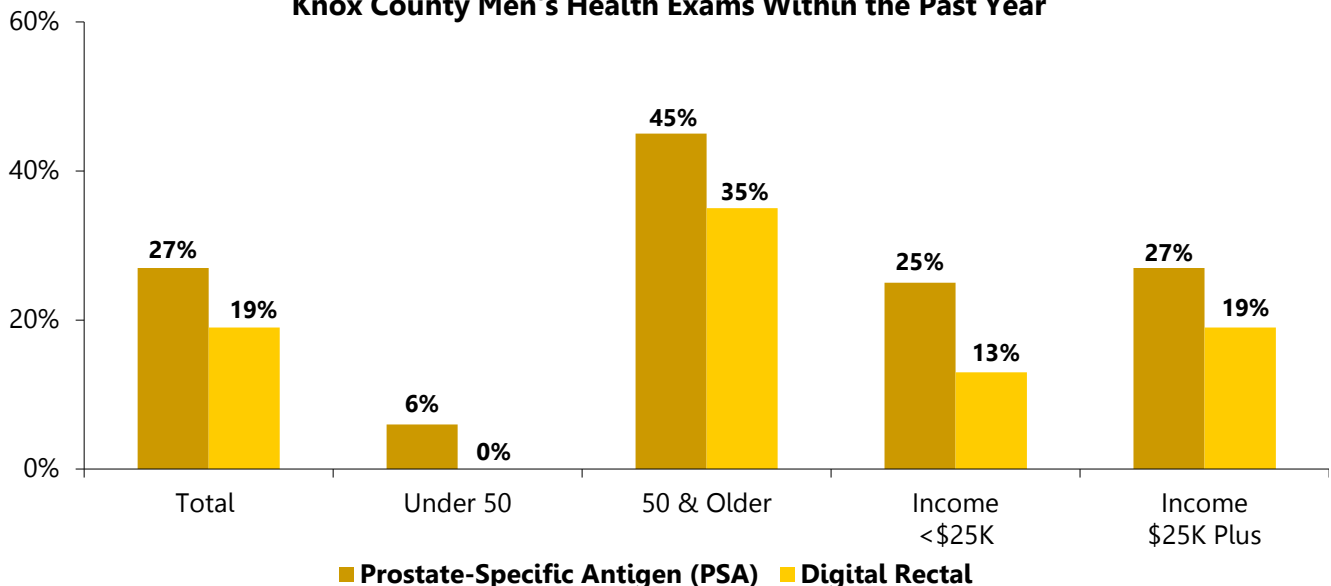


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

MEN'S HEALTH

In 2018, 45% of Knox County males over the age of 50 had a Prostate-Specific Antigen (PSA) test in the past year. Nearly half (45%) of Knox County men had a digital rectal exam in their lifetime, and 19% had one in the past year. More than one-third (36%) of men had been diagnosed with high blood pressure, 33% had high blood cholesterol, and 14% were identified as smokers, which, along with obesity (35%), are known risk factors for cardiovascular diseases.

Knox County Men's Health Exams Within the Past Year

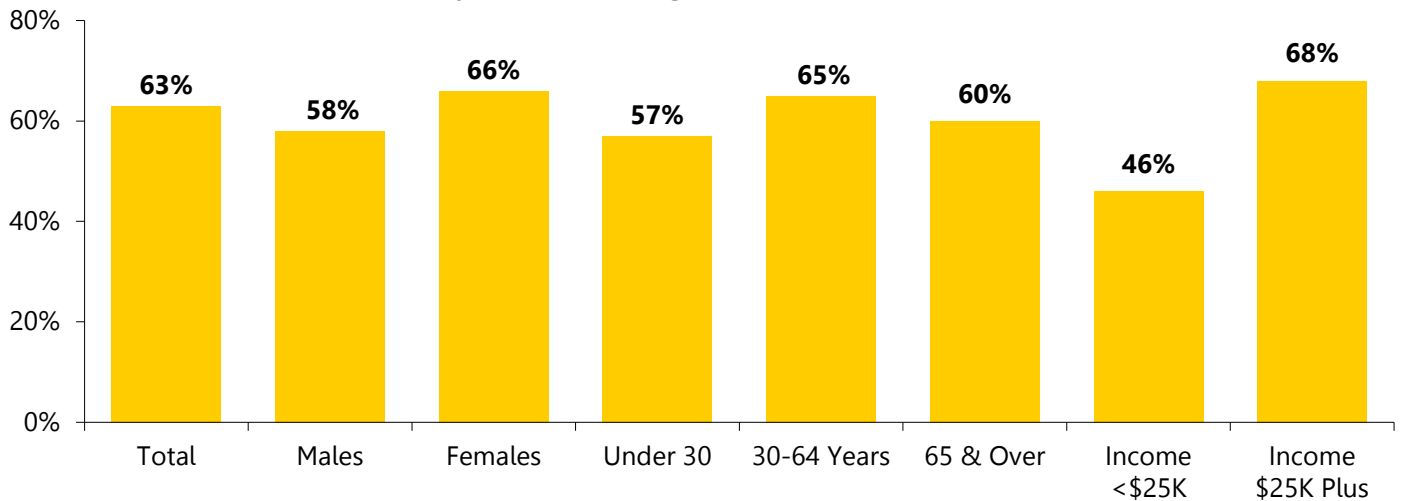


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ORAL HEALTH

Just over three-fifths (63%) of Knox County adults had visited a dentist or dental clinic in the past year. When asked the main reason for not visiting a dentist in the past year, 27% said cost.

Knox County Adults Visiting a Dentist in the Past Year

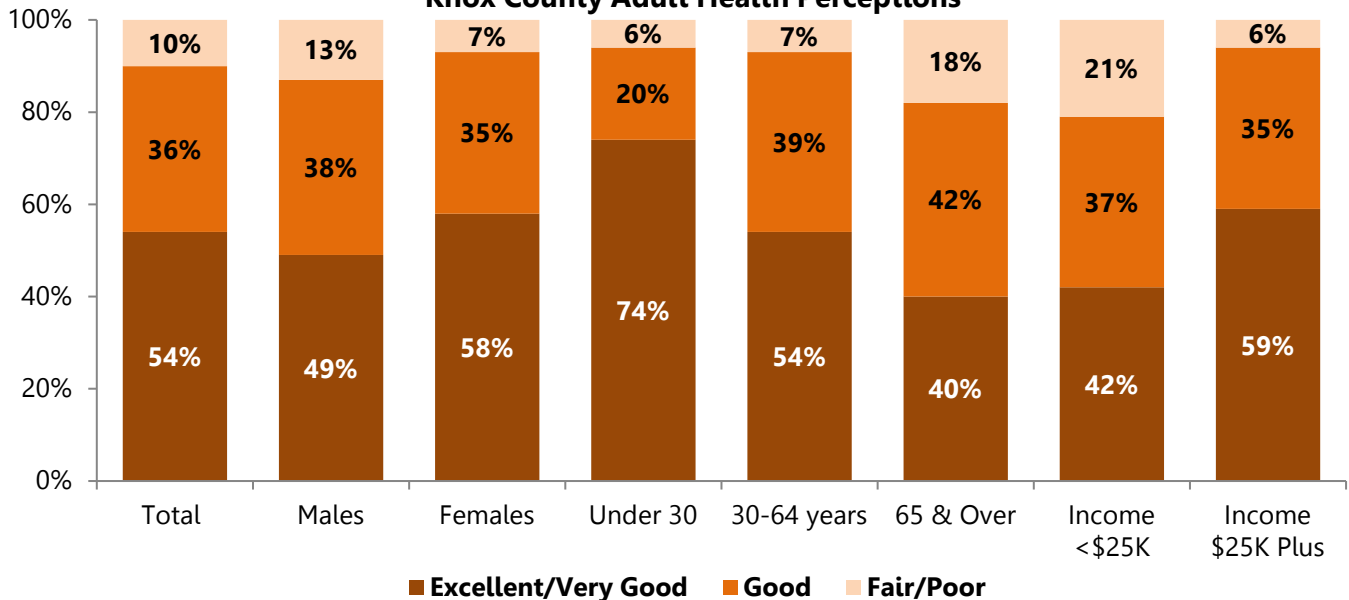


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

HEALTH STATUS PERCEPTIONS

In 2018, more than half (54%) of Knox County adults rated their health status as excellent or very good. Conversely, 10% of adults described their health as fair or poor, increasing to 21% of those with incomes less than \$25,000.

Knox County Adult Health Perceptions*



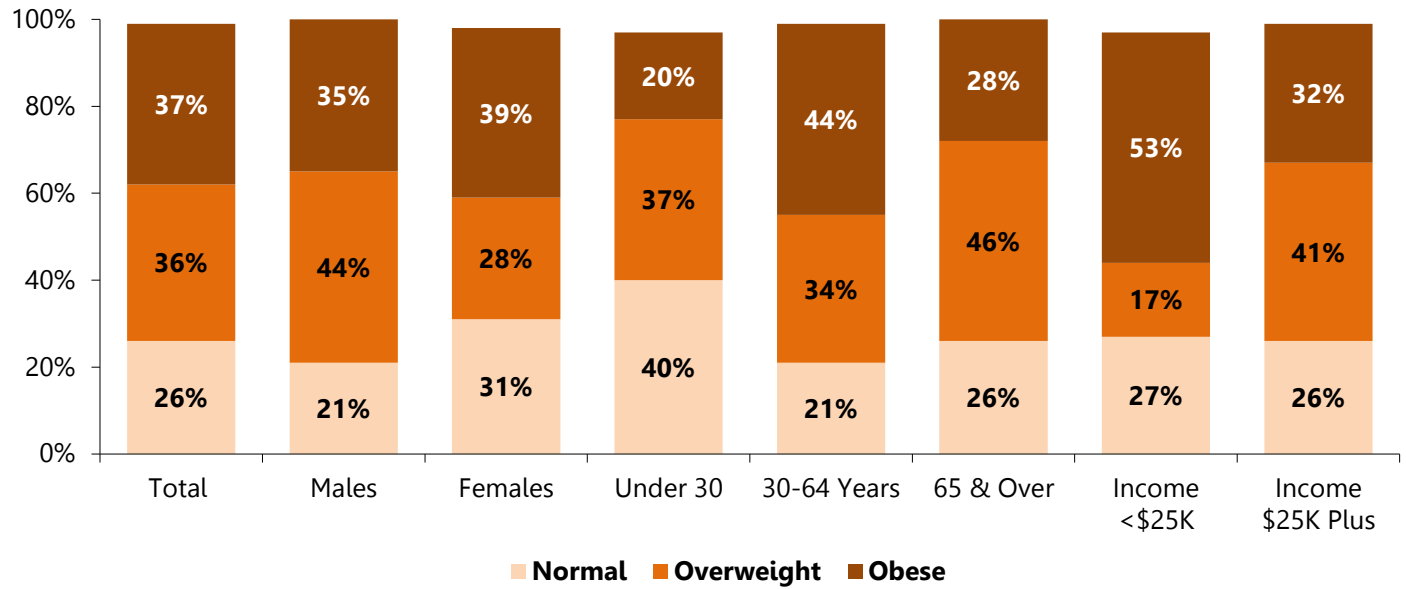
**Respondents were asked: "Would you say that in general your health is excellent, very good, good, fair or poor?"*

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ADULT WEIGHT STATUS

In 2018, 73% of Knox County adults were overweight or obese based on Body Mass Index (BMI). Over one-third (37%) of Knox County adults were obese. The 2016 BRFSS indicates that 32% of Ohio and 30% of U.S. adults were obese as measured by BMI.

Knox County Adult BMI Classifications*



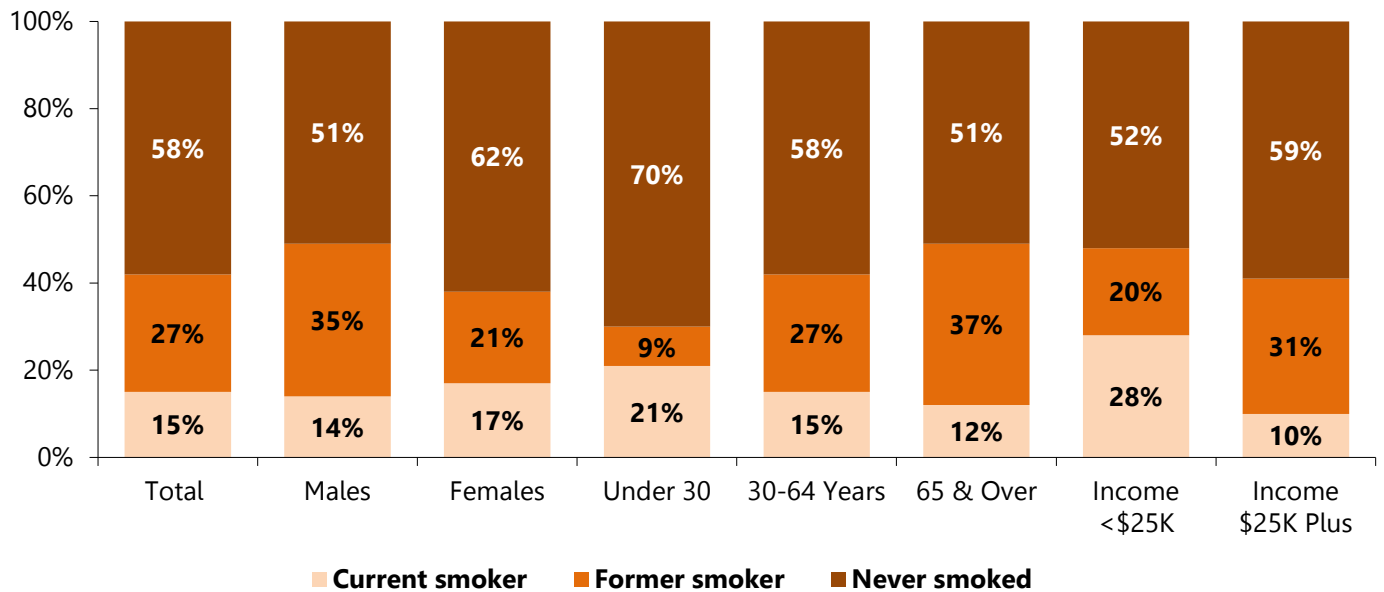
*Percentages may not equal 100% due to the exclusion of data for those who were classified as underweight

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ADULT TOBACCO USE

In 2018, 15% of Knox County adults were current smokers, and 27% were considered former smokers. Two percent (2%) of adults used e-cigarettes in the past year.

Knox County Adult Smoking Behaviors*



*Respondents were asked: "Have you smoked at least 100 cigarettes in your entire life?"

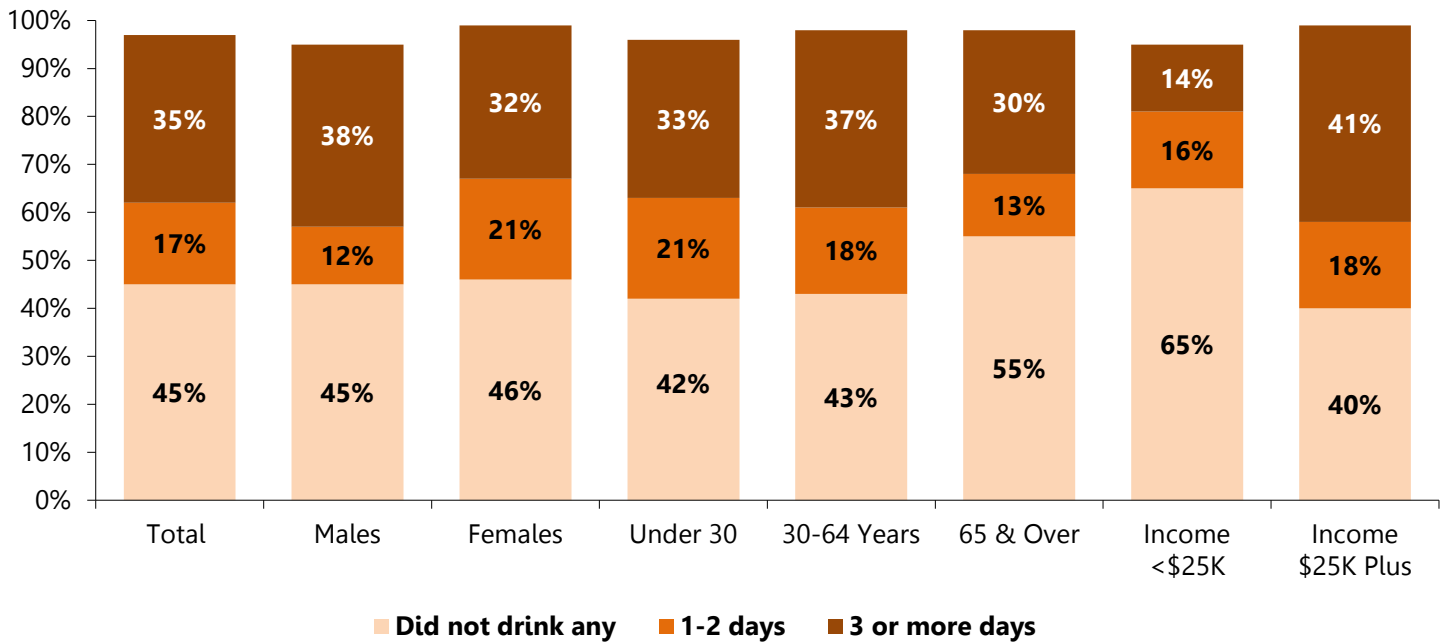
If yes, do you now smoke cigarettes every day, some days or not at all?"

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ADULT ALCOHOL CONSUMPTION

In 2018, 52% of Knox County adults had at least one alcoholic drink in the past month. One in six (17%) Knox County adults were considered binge drinkers (defined as consuming five or more drinks for males or four or more for females on one occasion) in the past month.

Average Number of Days Drinking Alcohol in the Past Month*



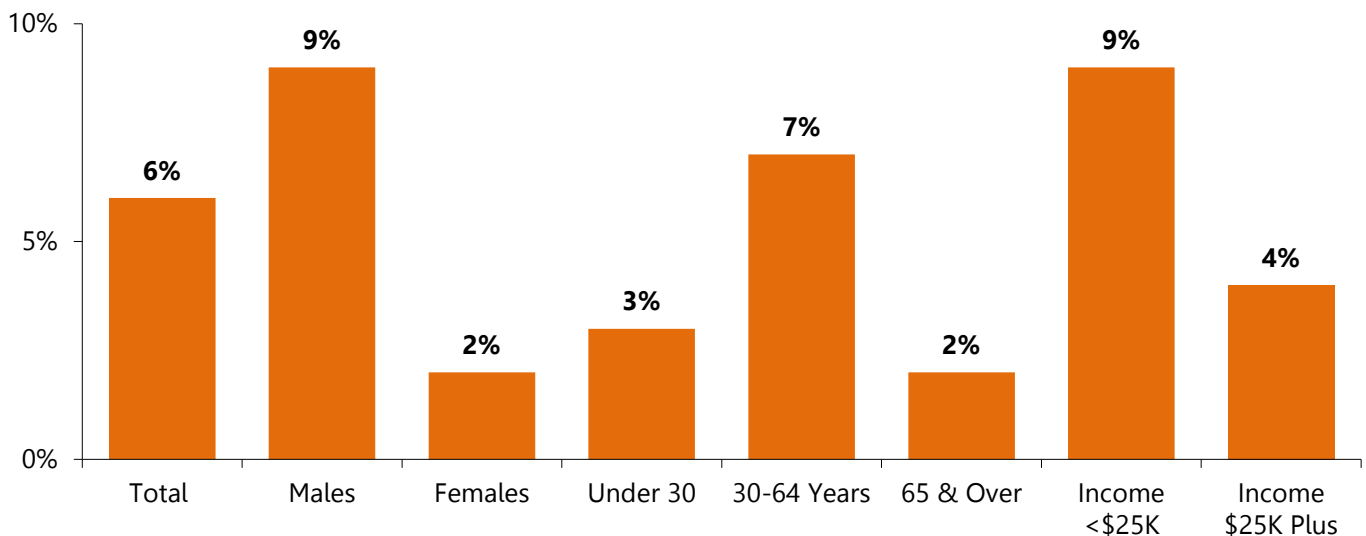
*Percentages may not equal 100% as some respondents answered, "don't know"

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ADULT DRUG USE

In 2018, 6% of Knox County adults had used recreational marijuana during the past 6 months. Seven percent (7%) of adults had used medication not prescribed for them or took more than prescribed to feel good, high, more active, and/or alert during the past 6 months.

Knox County Adult Recreational Marijuana Use in Past 6 Months

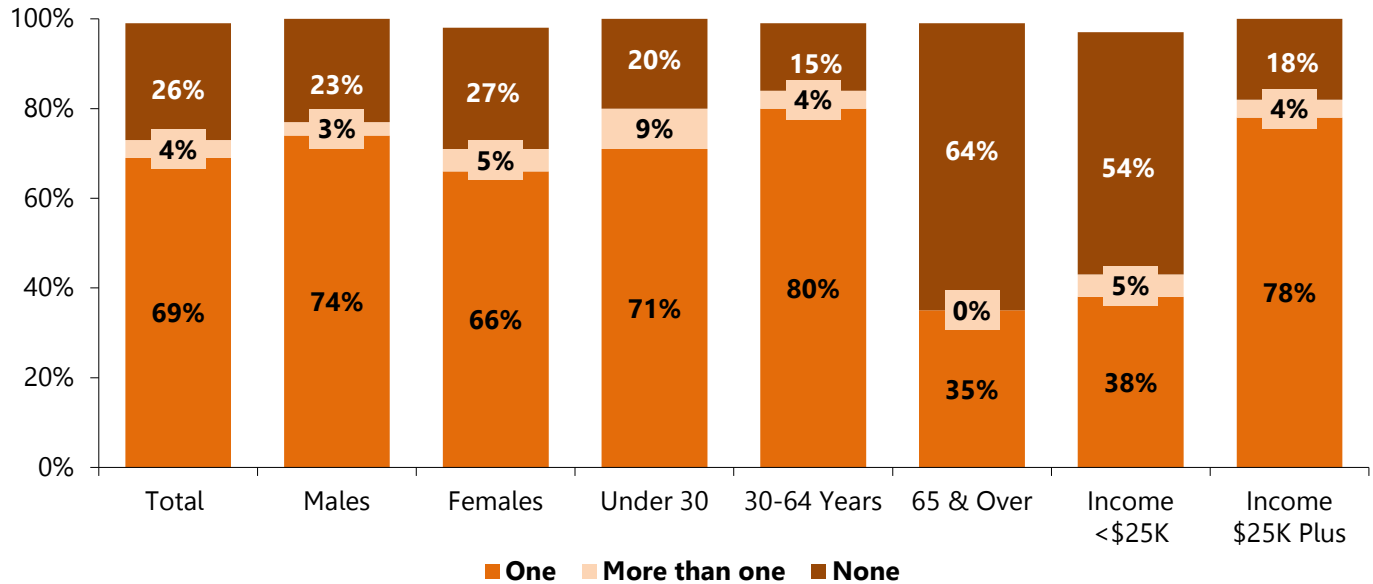


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ADULT SEXUAL BEHAVIOR

In 2018, 73% of Knox County adults had sexual intercourse. Four percent (4%) of adults had more than one partner. The CDC estimates that youth ages 15-24 make up just over one quarter of the sexually active population but account for half of the 20 million new sexually transmitted infections that occur in the United States each year (Source: CDC, *STDs in Adolescents and Young Adults, 2017 STD Surveillance*).

Number of Sexual Partners in the Past Year*



*Percentages may not equal 100% as some respondents answered, "don't know"

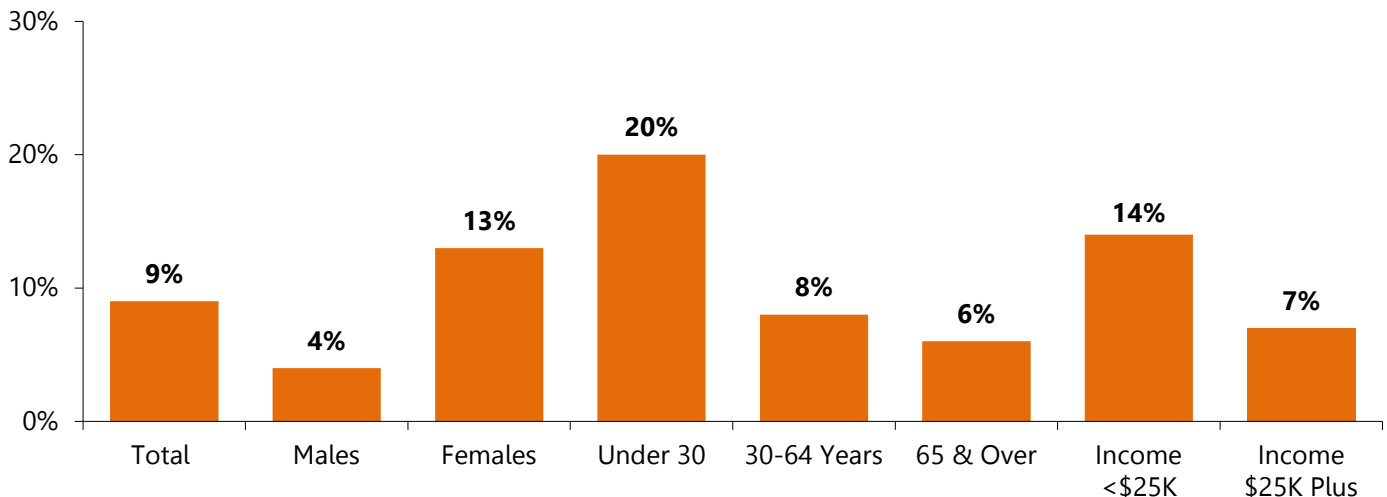
**Respondents were asked: "During the past 12 months, with how many different people have you had sexual intercourse?"

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ADULT MENTAL HEALTH

In 2018, 3% of Knox County adults considered attempting suicide. Nine percent (9%) of Knox County adults had a period of two or more weeks when they felt so sad or hopeless nearly every day that they stopped doing usual activities.

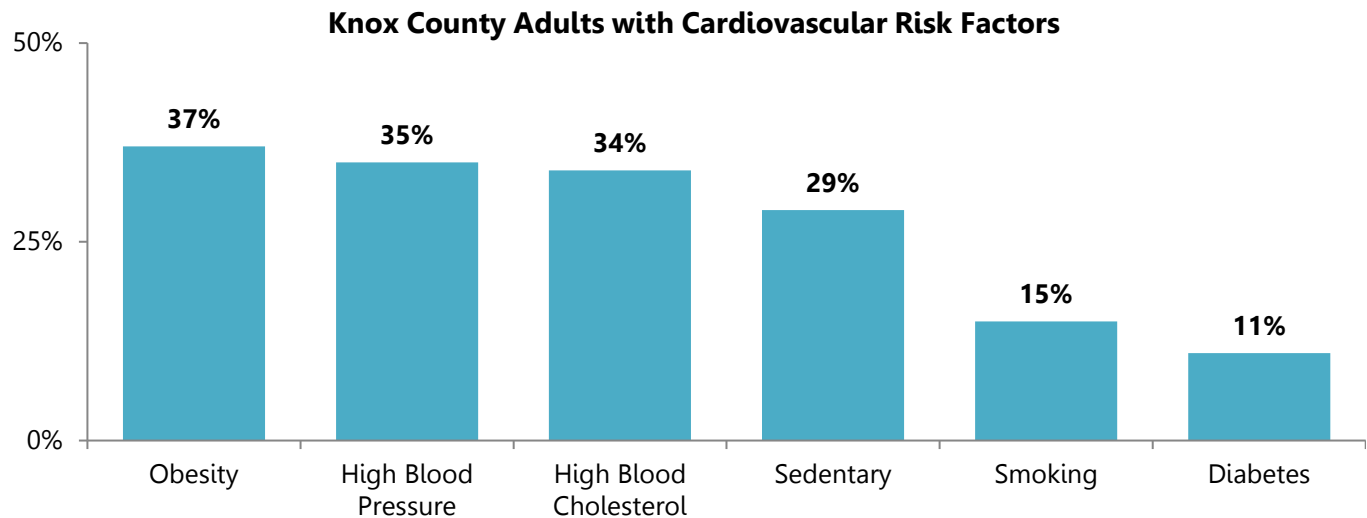
Knox County Adults Feeling Sad or Hopeless for Two or More Weeks in a Row



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

CARDIOVASCULAR HEALTH

In 2018, 7% of Knox County adults had survived a heart attack and 2% had survived a stroke at some time in their lives. More than one-third (37%) of Knox County adults were obese, 35% had high blood pressure, 34% had high blood cholesterol, and 15% were smokers, four known risk factors for heart disease and stroke.

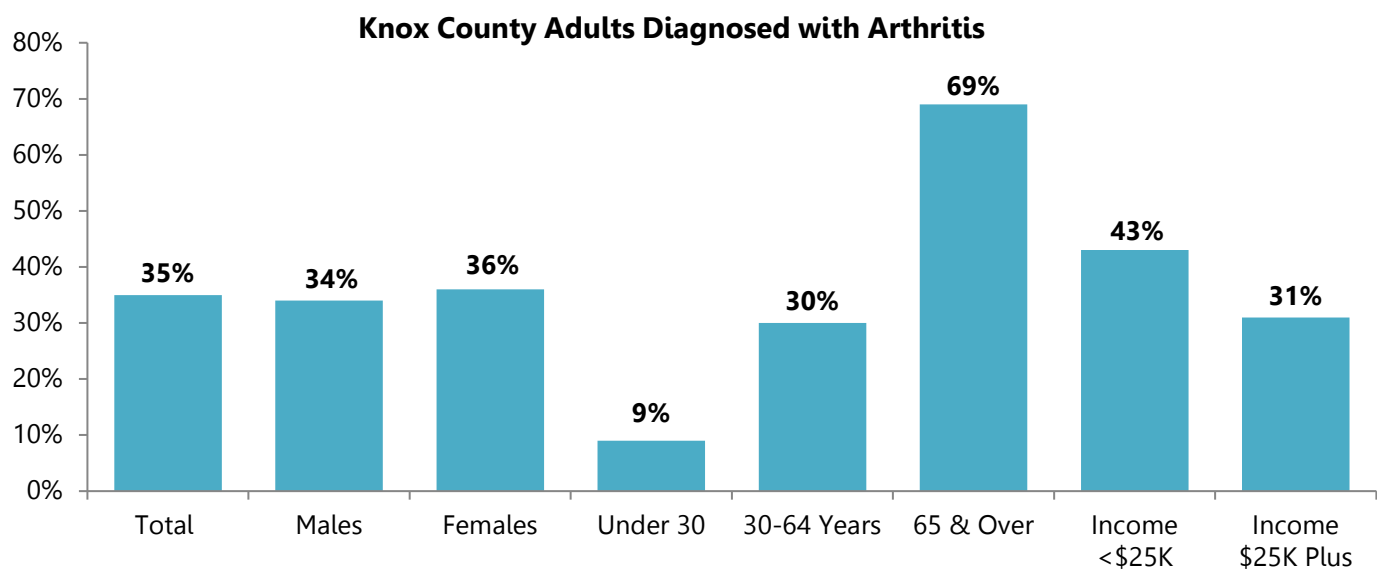


CANCER

In 2018, 14% of Knox County adults had been diagnosed with cancer at some time in their lives. The American Cancer Society advises that avoiding tobacco products, maintaining a healthy weight, adopting a physically active lifestyle, eating more fruits and vegetables, limiting alcoholic beverages, and early detection may reduce overall cancer deaths.

ARTHRITIS

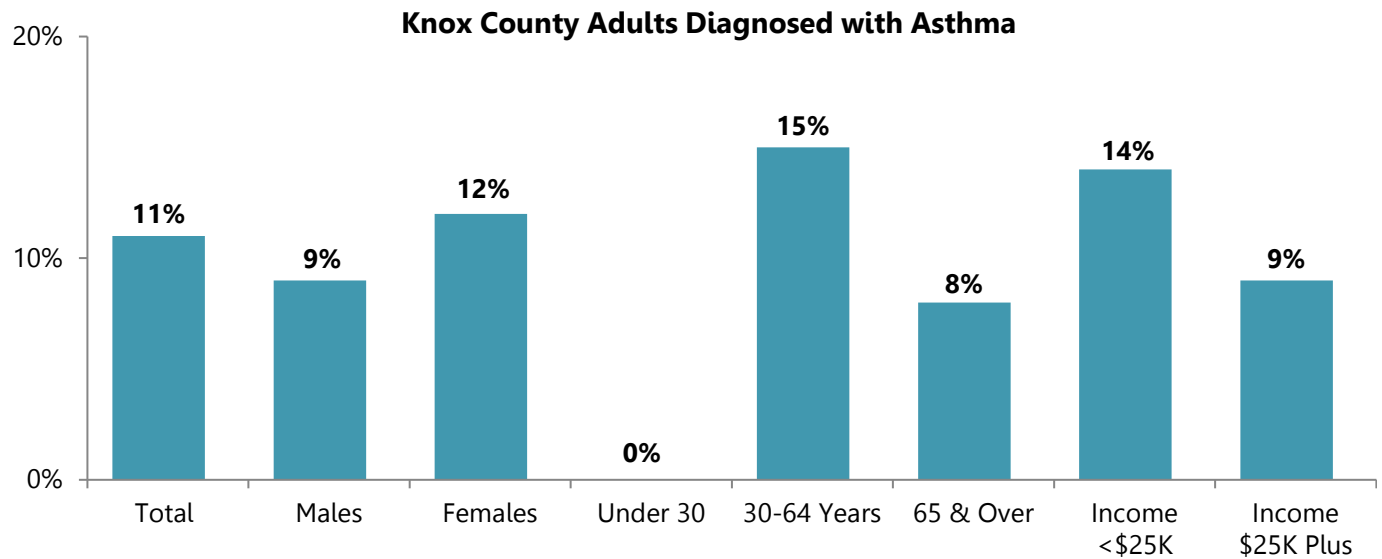
More than one-third (35%) of Knox County adults were diagnosed with arthritis. The 2016 BRFSS indicated that 31% of Ohio adults and 26% of U.S. adults were told they had arthritis.



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

ASTHMA

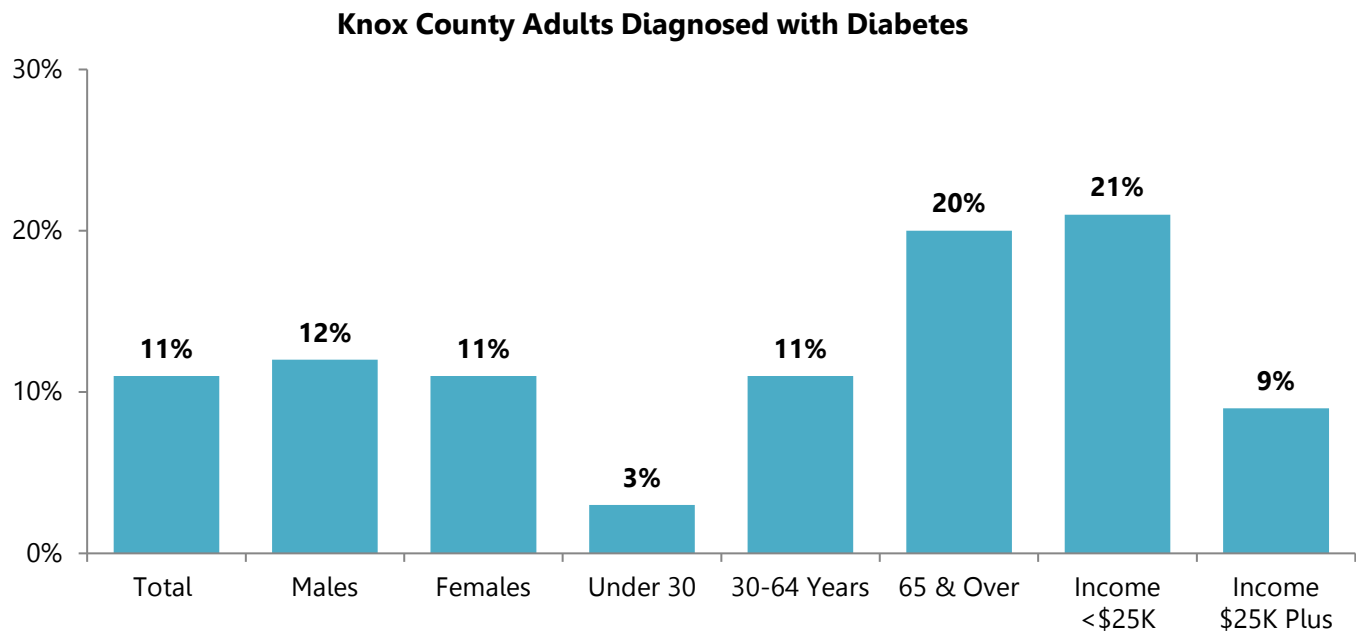
One in nine (11%) Knox County adults had been diagnosed with asthma.



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

DIABETES

In 2018, 11% of Knox County adults had been diagnosed with diabetes. Almost one-third (30%) of adults with diabetes rated their health as fair or poor.

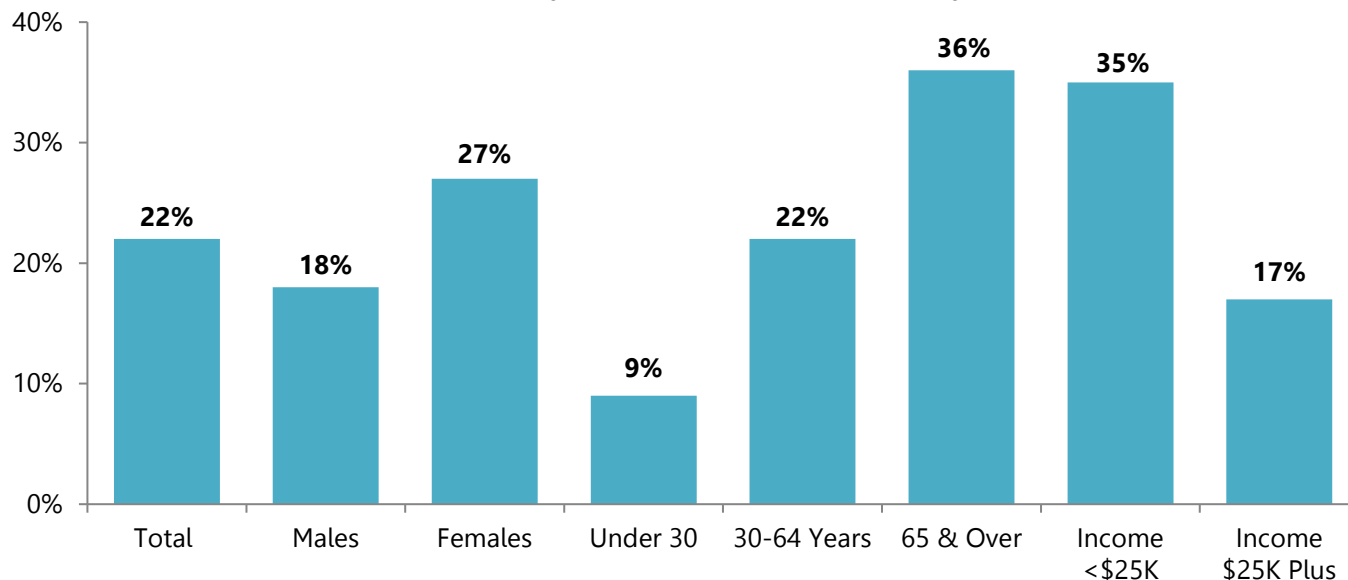


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

QUALITY OF LIFE

In 2018, 22% of Knox County adults were limited in some way because of a physical, mental or emotional problem. Arthritis/rheumatism (43%) and back/neck problems (43%) were reported as the most limiting problems in Knox County.

Knox County Adults Limited in Some Way

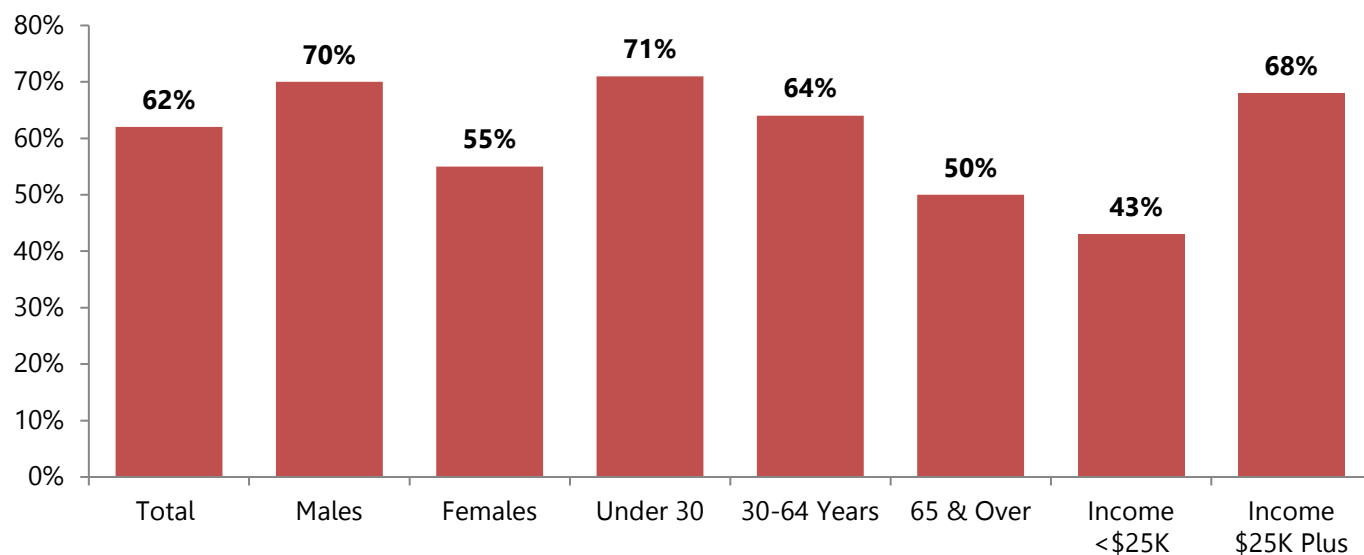


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

SOCIAL DETERMINANTS OF HEALTH

In 2018, 5% of Knox County adults were abused in the past year (including physical, sexual, emotional, financial, or verbal abuse). Eleven percent (11%) of adults needed help meeting their general daily needs. More than three-fifths (62%) of Knox County adults kept a firearm in or around their home.

Knox County Adults With a Firearm in the Home



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey








ENVIRONMENTAL HEALTH

Knox County adults reported the following as the top three environmental issues that threatened their health in the past year: insects (8%), temperature regulation (6%), and moisture issues (5%). Seventy-nine percent (79%) of adults reported they had a working smoke detector in their home.

PARENTING

More than half (55%) of parents discussed bullying and dating/relationships with their 12- to 17-year-old in the past year. More than four-fifths (83%) of parents reported their child had received all recommended immunizations.


ADULT TREND SUMMARY

Adult Variables	Knox County 2018	Ohio 2016	U.S. 2016
Health Status			
Rated health as excellent or very good	54%	51%	52%
Rated general health as fair or poor 	10%	18%	17%
Average days that physical health not good in past month 	4.0	4.0 [†]	3.7 [†]
Average days that mental health not good in past month 	4.2	4.3 [†]	3.8 [†]
Healthcare Coverage, Access, and Utilization			
Uninsured	11%	7%	10%
Had at least one person they thought of as their personal doctor or healthcare provider	83%	83%	77%
Visited a doctor for a routine checkup in the past year 	60%	75%	71%
Arthritis, Asthma, & Diabetes			
Had been diagnosed with diabetes 	11%	11%	11%
Had been diagnosed with arthritis	35%	31%	26%
Had been diagnosed with asthma 	11%	14%	14%
Cardiovascular Health			
Had angina or coronary heart disease 	5%	5%	4%
Had a heart attack 	7%	5%	4%
Had a stroke	2%	4%	3%
Had been diagnosed with high blood pressure 	35%	34%*	31%*
Had been diagnosed with high blood cholesterol	34%	37%*	36%*
Had blood cholesterol checked within the past 5 years	77%	78%*	78%*
Weight Status			
Obese 	37%	32%	30%
Overweight	36%	35%	35%
Alcohol Consumption			
Current Drinker (drank alcohol at least once in the past month)	52%	53%	54%
Binge drinker (defined as consuming more than four [women] or five [men] alcoholic beverages on a single occasion in the past 30 days) 	17%	18%	17%
Tobacco Use			
Current smoker (currently smoke some or all days) 	15%	23%	17%
Former smoker (smoked 100 cigarettes in lifetime & now do not smoke)	27%	24%	25%

N/A - Not available

[†]2016 BRFSS Data as compiled by 2018 County Health Rankings

*2015 BRFSS Data

 Indicates alignment with the Ohio State Health Assessment

Adult Variables	Knox County 2018	Ohio 2016	U.S. 2016
Preventive Medicine			
Had a mammogram in the past two years (ages 40 and older)	65%	74%	72%
Had a pap smear in the past three years	59%	82%¥	80%¥
Had a PSA test in within the past two years (age 40 and over)	54%	39%	40%
Quality of Life			
Limited in some way because of physical, mental or emotional problem	22%	21%*	21%*
Oral Health			
Adults who had visited the dentist in the past year 🇺🇸	63%	68%	66%
Adults who had one or more permanent teeth removed	47%	45%	43%
Adults 65 years and older who had all of their permanent teeth removed	21%	17%	14%

N/A - Not available

*2015 BRFSS Data

¥ Ohio and U.S. BRFSS reports women ages 21-65

🇺🇸 Indicates alignment with the Ohio State Health Assessment

Healthcare Access: Healthcare Coverage

Key Findings

In 2018, 11% of Knox County adults were without healthcare coverage, increasing to 15% of those with incomes less than \$25,000.

General Health Coverage

- In 2018, 89% of Knox County adults had healthcare coverage.
- In the past year, 11% (approximately 4,964) of adults were uninsured, increasing to 15% of those with incomes less than \$25,000. The 2016 BRFSS reported uninsured prevalence rates as 7% for Ohio and 10% for U.S. adults.
- The following types of healthcare coverage were used: employer (46%), someone else's employer (15%), Medicare (13%), multiple-including private sources (7%), Medicaid or medical assistance (7%), self-paid plan (4%), multiple-including government sources (4%), Health Insurance Marketplace (3%), and military or VA (1%).
- Knox County adult healthcare coverage included the following: medical (95%), prescription coverage (92%), immunizations (82%), preventive health (78%), dental (72%), outpatient therapy (72%), vision/eyeglasses (65%), mental health (55%), durable medical equipment (37%), alcohol and drug treatment (37%), home care (29%), skilled nursing/assisted living (28%), hospice (21%), and transportation (15%).
- The top 5 reasons uninsured adults gave for being without healthcare coverage were:
 1. They lost their job or changed employers (35%)
 2. They could not afford to pay the premiums (28%)
 3. They refused to take insurance (12%)
 4. They became ineligible (12%)
 5. Their employer did not offer/stopped offering coverage (8%)

(Percentages do not equal 100% because respondents could select more than one reason)

- Knox County adults had the following issues regarding their healthcare coverage: cost (31%), opted out of certain coverage because they could not afford it (9%), could not understand their insurance plan (6%), working with their insurance company (6%), provider no longer covered (5%), pre-existing conditions (4%), service not deemed medically necessary (4%), opted out of certain coverage because they did not need it (3%), limited visits (3%), and service no longer covered (2%).

Key Facts about the Uninsured Population

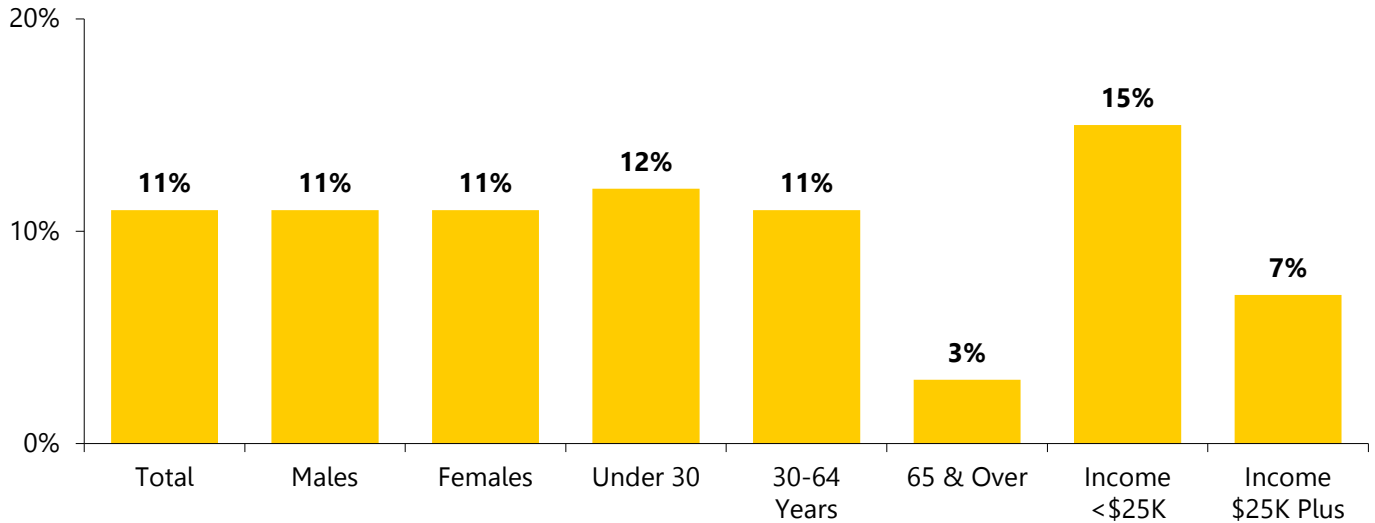
- Studies repeatedly demonstrate that the uninsured are less likely than those with insurance to receive preventive care and services for major health conditions and chronic diseases.
- Part of the reason for poor access among uninsured is that 50% do not have a regular place to go when they are sick or need medical advice.
- One in five (20%) nonelderly adults without coverage say that they went without care in the past year because of cost compared to 3% of adults with private coverage and 8% of adults with public coverage.
- In 2016, uninsured nonelderly adults were three times as likely as adults with private coverage to say that they postponed or did not get a needed prescription drug due to cost.
- Because people without health coverage are less likely than those with insurance to have regular outpatient care, they are more likely to be hospitalized for avoidable health problems and to experience declines in their overall health.

(Source: The Henry Kaiser Family Foundation, Key Facts about the Uninsured Population, 2017)

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Uninsured	11%	7%	10%

The following graph shows the percentages of Knox County adults who were uninsured by demographic characteristics. Examples of how to interpret the information in the graph include: 11% of all Knox County adults were uninsured, including 12% of those under the age of 30 and 15% of those with incomes less than \$25,000. The pie chart shows sources of Knox County adults' healthcare coverage.

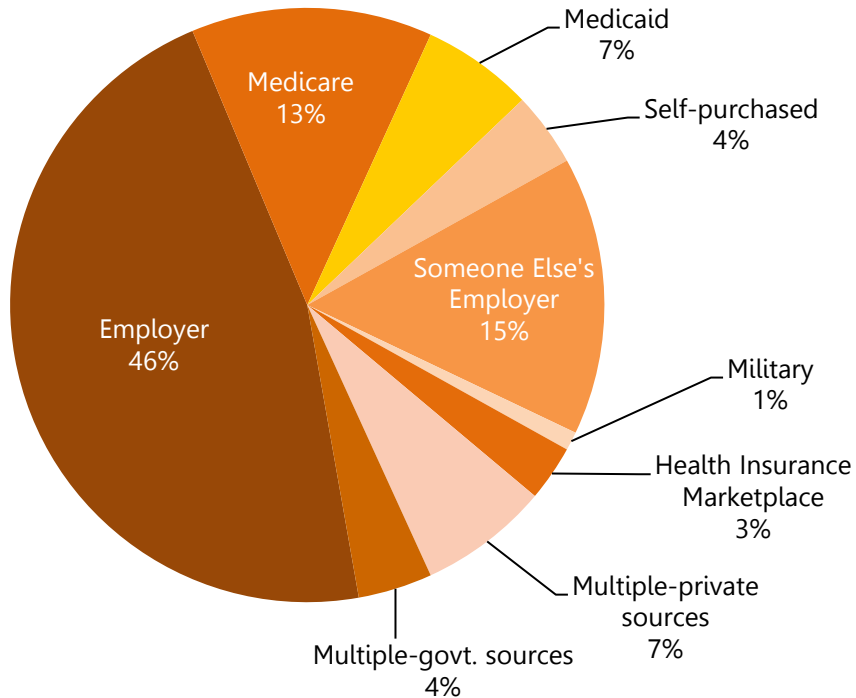
Uninsured Knox County Adults



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

15% of Knox County adults with incomes less than \$25,000 were uninsured.

Source of Health Coverage for Knox County Adults



The following chart shows what was included in Knox County adults' insurance coverage.

Health Coverage Included:	Yes	No	Don't Know
Medical	95%	1%	4%
Prescription Coverage	92%	5%	3%
Immunizations	82%	3%	15%
Preventive Health	78%	1%	21%
Dental	72%	23%	5%
Outpatient Therapy	72%	1%	27%
Vision/Eyeglasses	65%	25%	10%
Mental Health	55%	<1%	45%
Durable Medical Equipment	37%	1%	62%
Alcohol and Drug Treatment	37%	3%	60%
Home Care	29%	4%	67%
Skilled Nursing/Assisted Living	28%	2%	70%
Hospice	21%	3%	76%
Transportation	15%	14%	71%

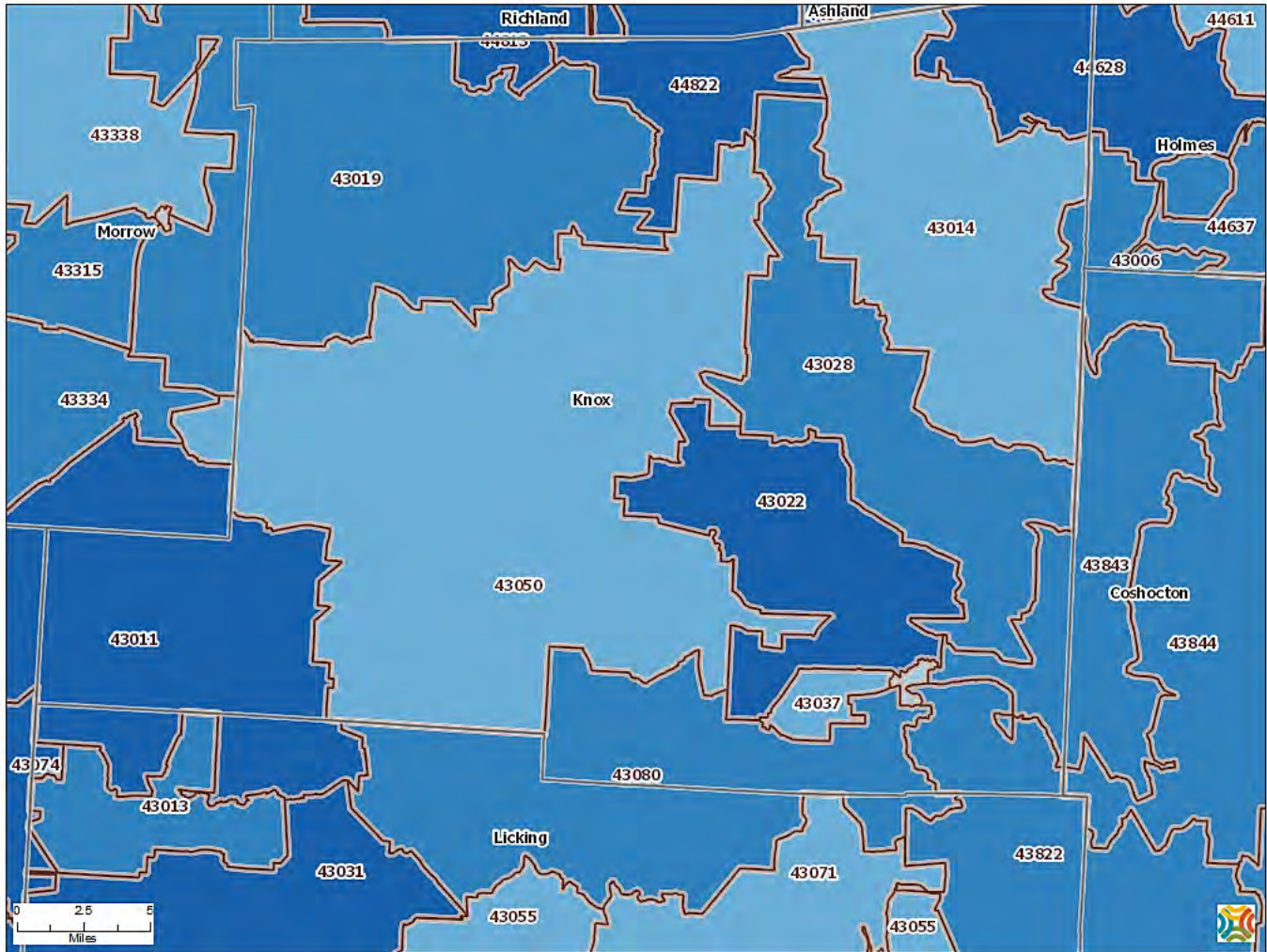
**Healthy People 2020
Access to Health Services (AHS)**

Objective	Knox County 2018	Ohio 2016	U.S. 2016	Healthy People 2020 Target
AHS-1.1: Persons under age of 65 years with healthcare insurance	100% age 20-24 80% age 25-34 89% age 35-44 96% age 45-54 83% age 55-64	90% age 18-24 89% age 25-34 91% age 35-44 94% age 45-54 94% age 55-64	85% age 18-24 84% age 25-34 87% age 35-44 90% age 45-54 93% age 55-64	100%

*Note: U.S. baseline is age-adjusted to the 2000 population standard
(Sources: Healthy People 2020 Objectives, 2016 BRFSS, 2018 Knox County Health Assessment)*

Insurance Type by Zip Code Tract Area, American Community Survey, 2011-2015

Private Insurance



Map Legend

Insured, Private Insurance, Percent by ZCTA, ACS 2011-15

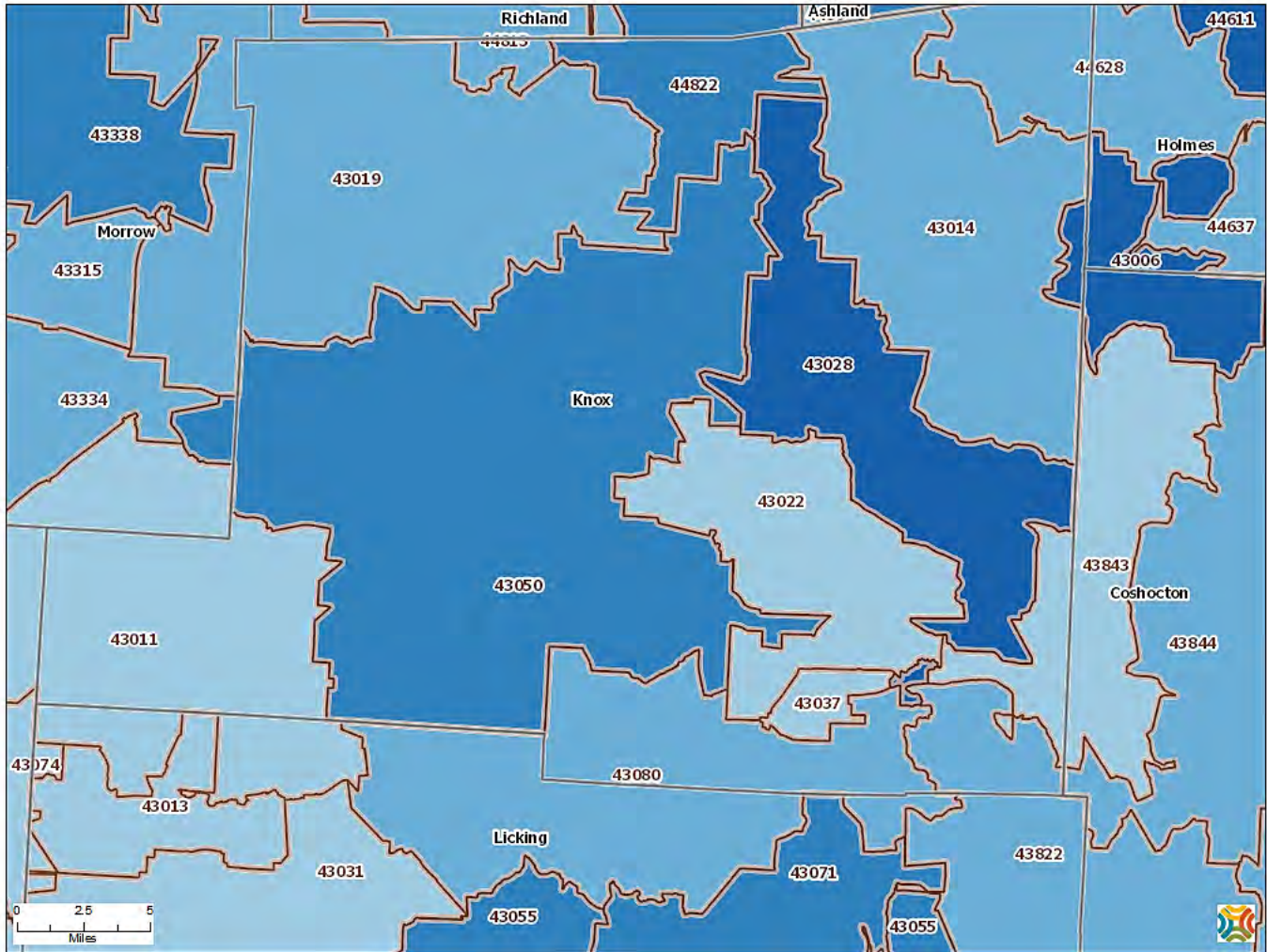
- Over 85.0%
- 77.1 - 85.0%
- 69.1 - 77.0%
- Under 69.1%
- No Data or Data Suppressed

Community Commons, 1/8/2018

(Source: U.S. Census Bureau, American Community Survey: 2011-2015 as compiled by Community Commons)

Insurance Type by Zip Code Tract Area, American Community Survey, 2011-2015

Medicare



Map Legend

Insured, Medicare, Percent by ZCTA, ACS 2011-15

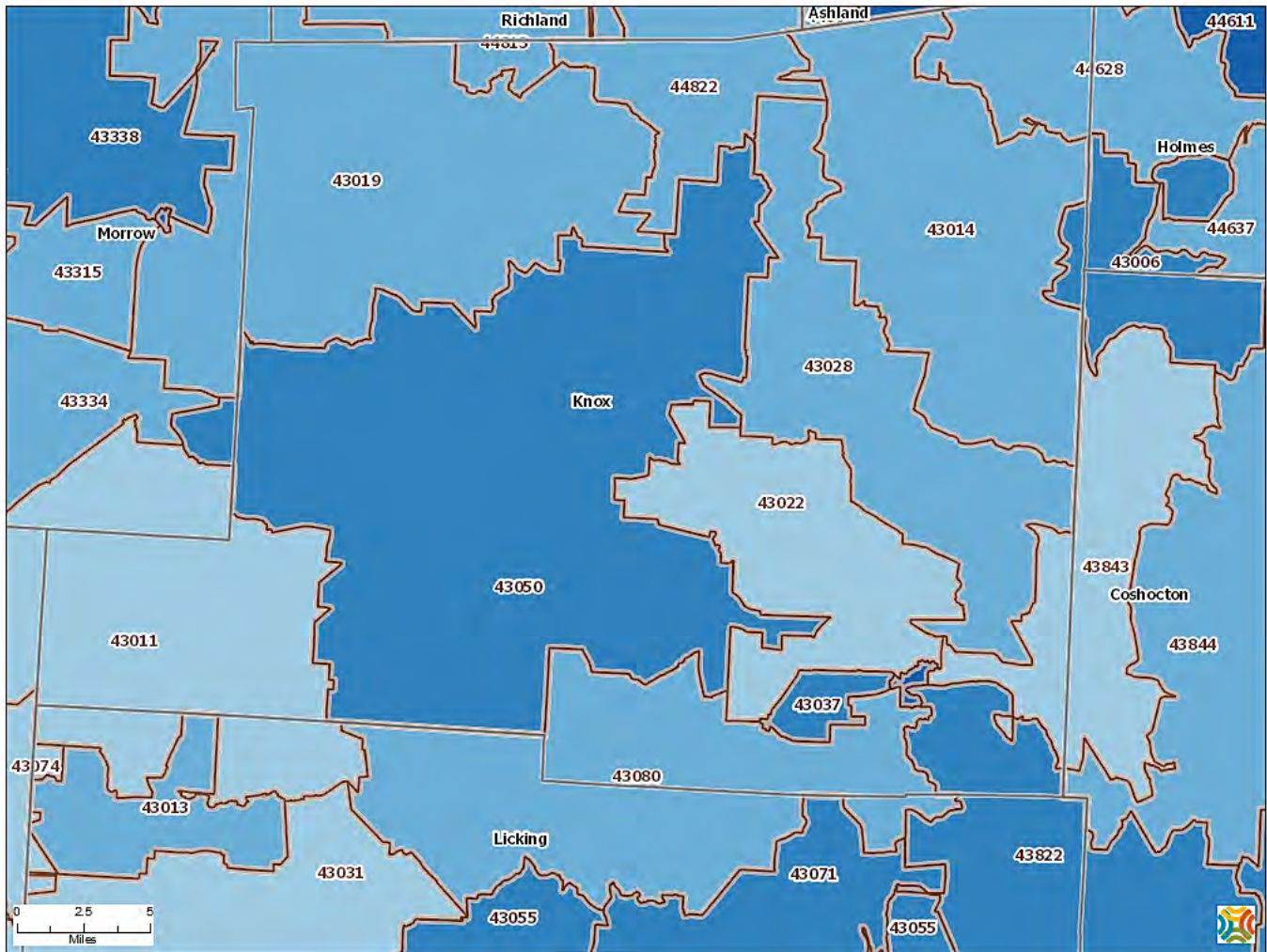
- Over 25.0%
- 20.1 - 25.0%
- 15.1 - 20.0%
- Under 15.1%
- No Data or Data Suppressed

Community Commons, 1/8/2018

(Source: U.S. Census Bureau, American Community Survey: 2011-2015 as compiled by Community Commons)

Insurance Type by Zip Code Tract Area, American Community Survey, 2011-2015

Public-Funded Insurance



Map Legend

Insured, Public-Funded Insurance, Percent by ZCTA, ACS 2011-15

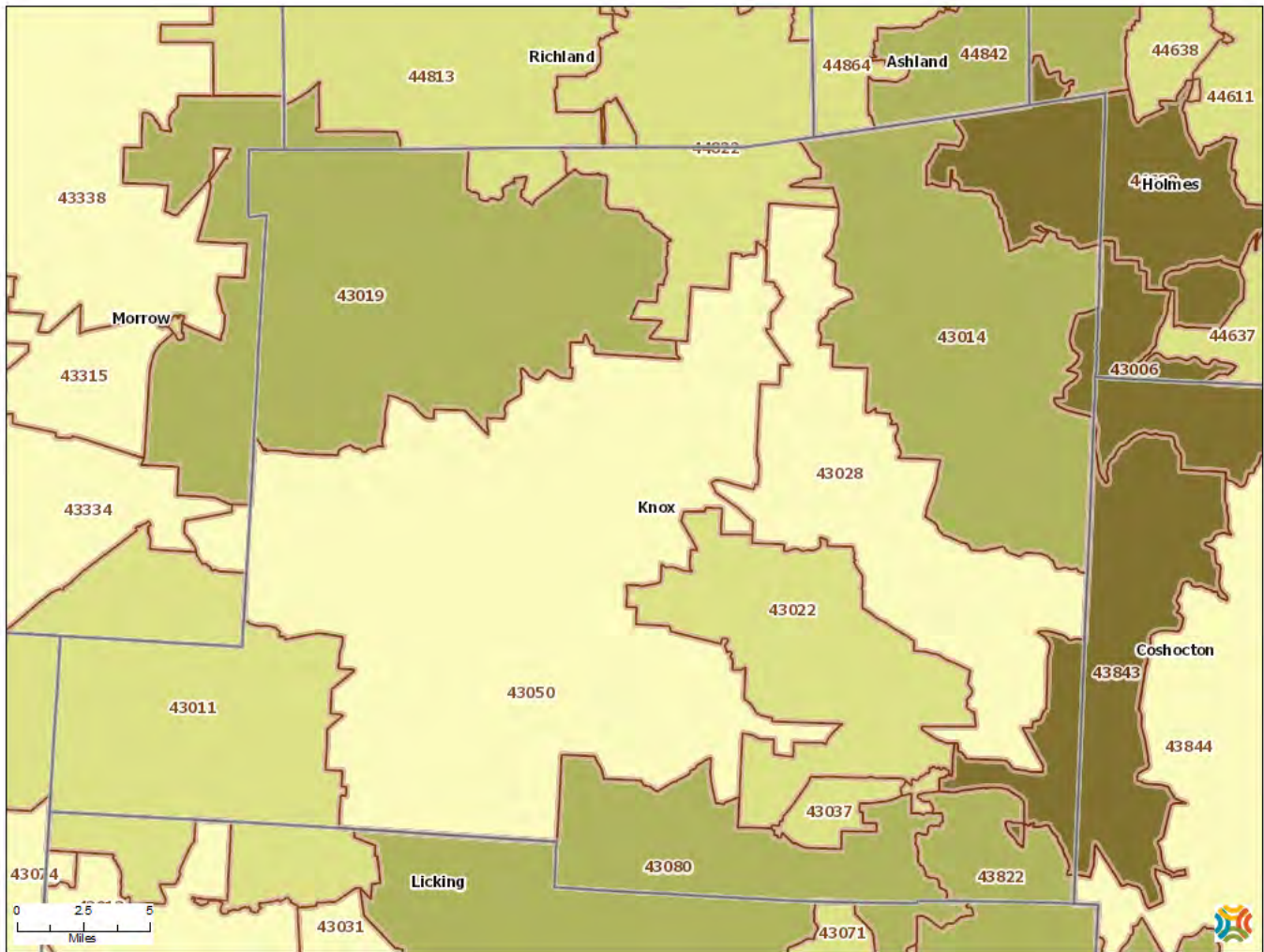
- Over 45.0%
- 35.1 - 45.0%
- 25.1 - 35.0%
- Under 25.1%
- No Data or Data Suppressed

Community Commons, 1/8/2018

(Source: U.S. Census Bureau, American Community Survey: 2011-2015, as compiled by Community Commons)

Insurance Type by Zip Code Tract Area, American Community Survey, 2011-2015

Uninsured



Map Legend

Uninsured Population, Percent by ZCTA, ACS 2011-15

- Over 20.0%
- 15.1 - 20.0%
- 10.1 - 15.0%
- Under 10.1%
- No Data or Data Suppressed

Community Commons, 1/24/2018

(Source: U.S. Census Bureau, American Community Survey: 2011-2015, as compiled by Community Commons)

Healthcare Access: Access and Utilization

Key Findings

In 2018, 60% of Knox County adults had visited a doctor for a routine checkup. Almost three-fifths (59%) of adults went outside of Knox County for healthcare services in the past year.

Healthcare Access and Utilization

- Three-fifths (60%) of Knox County adults visited a doctor for a routine checkup in the past year, increasing to 83% of those over the age of 65.
- Half (50%) of Knox County adults reported they had one person they thought of as their personal doctor or healthcare provider, decreasing to 34% of those with incomes less than \$25,000 and 29% of those who were uninsured. One-third (33%) of adults had more than one person they thought of as their personal healthcare provider, and 16% did not have one at all.
- Knox County adults preferred to access information about their health or healthcare services from the following: doctor (83%); family member or friend (39%); internet searches (36%); Medical Portal (20%); newspaper articles or radio/television news stories (13%); advertisements or mailings from hospitals, clinics, or doctor's offices (12%); text messages (9%); social networks (4%); and billboards (1%).

60% of Knox County adults had visited a doctor for a routine checkup.

- Knox County adults did not receive medical care in the past 12 months for the following reasons: no need to go (20%), cost/no insurance (9%), office was not open when they could get there (1%), provider did not take their insurance (1%), too embarrassed to seek help (1%), inconvenient appointment times (1%), too long to wait for an appointment (1%), ability to access medical records online (<1%), distance (<1%), and other reasons (3%).
- Adults usually visited the following places for healthcare services for advice: doctor's office (51%), urgent care center (8%), public health clinic or community health department (5%), internet (4%), family and friends (4%), in-store health clinic (2%), chiropractor (1%), Department of Veteran's Affairs (VA) (1%), and hospital emergency room (<1%). Just over one-fifth (21%) of adults visited multiple places for healthcare services or advice, and five percent (5%) of adults had no usual place for healthcare services.
- Almost three-fifths (59%) of adults went outside of Knox County for the following healthcare services in the past 12 months: specialty care (25%), primary care (19%), dental services (14%), obstetrics/gynecology (11%), female health services (9%), orthopedic care (8%), pediatric care (5%), cardiac care (4%), cancer care (4%), mental healthcare/counseling services (3%), pediatric therapies (2%), and other services (9%).
- Reasons for going outside of Knox County for healthcare services included the following: better quality program (25%), service not available locally (21%), did not like local services/providers (18%), insurance restrictions (14%), used to live there (14%), had a bad experience locally (10%), worked there (9%), word of mouth (8%), confidentiality/anonymity (2%), inconvenient hours (2%), wait list too long locally (2%), and other reasons (20%).
- Adults went outside of Knox County for mental health services in the past 12 months for the following reasons: better quality program (4%), insurance restrictions (2%), did not like the local program (1%), wait list too long in Knox County (1%), confidentiality/anonymity (1%), and word of mouth (1%). More than one-fourth (29%) of adults did not need mental health services.

Availability of Services

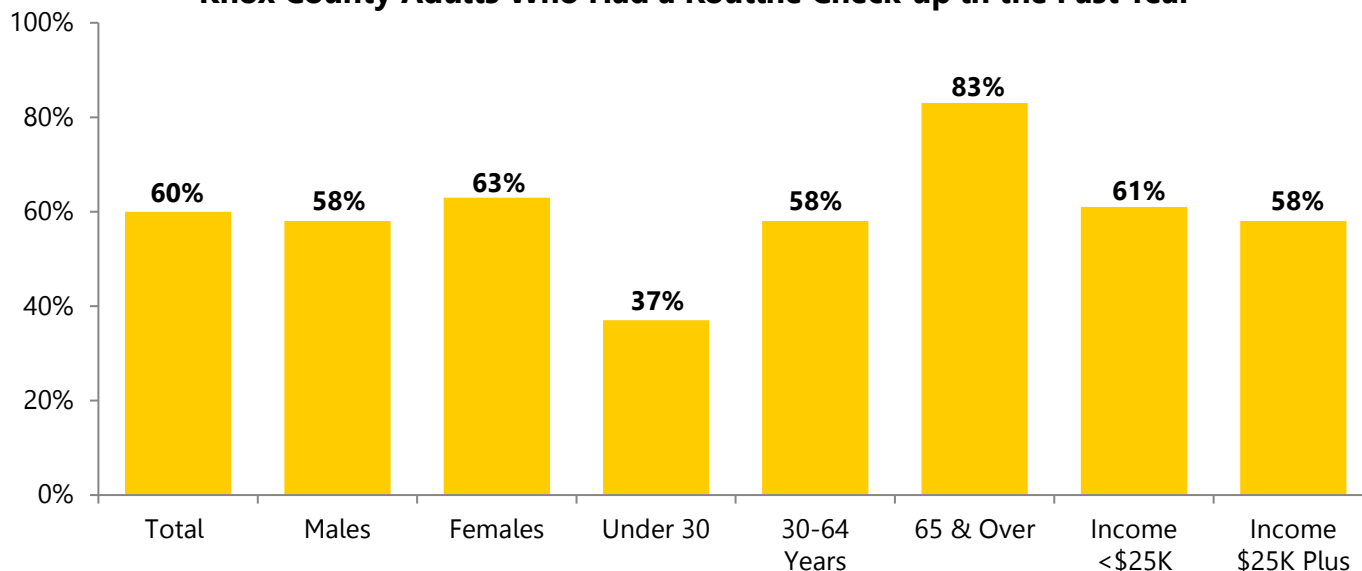
- Knox County adults reported they had looked for the following programs: depression, anxiety, or mental health (8%); elderly care (6%); disability (4%); weight problems (4%); marital or family problems (3%); end-of-life/Hospice care (2%); tobacco cessation (2%); alcohol abuse (1%); drug abuse (1%); and detoxification for opiates/heroin (<1%).

Knox County Adults Who Looked for Specific Programs/Services

Types of Programs (% of all adults who looked for the programs)	Knox County adults who have looked but have NOT found a specific program	Knox County adults who have looked and have found a specific program
Depression or Anxiety (8% of all adults looked)	14%	86%
Elderly Care (6% of all adults looked)	24%	76%
Disability (4% of all adults looked)	23%	77%
Weight Problems (4% of all adults looked)	36%	64%
Marital/Family Problems (3% of all adults looked)	44%	56%
End-of-Life/Hospice Care (2% of all adults looked)	0%	100%
Tobacco Cessation (2% of all adults looked)	33%	67%
Alcohol Abuse (1% of all adults looked)	33%	67%
Drug Abuse (1% of all adults looked)	0%	100%
Detoxification for Opiates/Heroin (<1% of all adults looked)	0%	100%

The following graph shows the percentage of Knox County adults who had a routine check-up in the past year. Examples of how to interpret the information include: 60% of all Knox County adults had a routine check-up in the past year, including 63% of all Knox County females and 83% of those 65 years and older.

Knox County Adults Who Had a Routine Check-up in the Past Year



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Had at least one person they thought of as their personal doctor or healthcare provider	83%	83%	77%
Visited a doctor for a routine checkup (in the past year)	60%	75%	71%

Healthcare Access: Preventive Medicine

Key Findings

More than half (57%) of Knox County adults were at risk for high blood pressure based on family history. More than one-third (36%) of adults discussed family history with their healthcare provider in the past year.

Preventive Medicine

- Based on family history, Knox County adults were at risk for the following health issues:
 - High blood pressure (57%)
 - Heart disease (48%)
 - Cancer (47%)
 - Diabetes (42%)
 - High blood cholesterol (31%)
 - Mental illness (17%)
 - Alcohol addiction (14%)
 - Alzheimer’s disease (10%)
 - Drug addiction (5%)
 - Suicide (2%)
 - Other addictions (1%)
 - Unexplained sudden death (1%)

Preventive Health Screenings and Exams

- In the past year, 43% of Knox County women ages 40 and over had a mammogram.
- More than one-third (34%) of women had a Pap smear in the past year.
- Almost half (45%) of Knox County men had a digital rectal exam in their lifetime, and 19% had one in the past year.
- See the Women and Men’s Health Sections for further prostate, mammogram, clinical breast exam, and Pap smear screening test information for Knox County adults.

Knox County Adult Health Screening Results

General Screening Results	Total 2018 Sample
Diagnosed with High Blood Pressure	35%
Diagnosed with High Blood Cholesterol	34%
Diagnosed with Diabetes	11%
Survived a Heart Attack	7%
Survived a Stroke	2%

Percentages based on all Knox County adults surveyed

**Knox County Adults Having Discussed Healthcare Topics
With Their Healthcare Professional in the Past 12 Months**

Healthcare Topics	Total 2018
Family history	36%
Immunizations	35%
Weight control including diet and physical activity	28%
Depression, anxiety, or emotional problems	20%
Safe use of prescription medication	19%
Bones density	12%
Injury prevention such as safety belt use, helmet use & smoke detectors	12%
Prostate-Specific Antigen (PSA) test	10%
Tobacco use	10%
Falls	8%
Safe use of opiate-based pain medication	8%
Family planning	7%
Alcohol use	6%
Sexually transmitted diseases (STDs)	5%
Domestic violence	4%
Self-testicular exams	4%
Drug abuse	2%
Firearm safety	1%

N/A – Not Available

Healthcare Access: Women's Health

Key Findings

In 2018, more than two-fifths (43%) of Knox County women ages 40 and older reported having a mammogram in the past year. Forty-three percent (43%) of Knox County women ages 19 and older had a clinical breast exam and 34% had a Pap smear to detect cancer of the cervix in the past year. Five percent (5%) of women survived a heart attack and 1% survived a stroke at some time in their life. Nearly two-fifths (39%) were obese, 34% had high blood cholesterol, 32% had high blood pressure, and 17% were identified as smokers, all of which are known risk factors for cardiovascular diseases.

Women's Health Screenings

- In 2018, 58% of women had a mammogram at some time in their life, and more than one-fourth (28%) had this screening in the past year.
- More than two-fifths (43%) of women ages 40 and older had a mammogram in the past year, and 65% had one in the past two years. The 2016 BRFSS reported that 74% of women 40 and over in Ohio and 72% in the U.S. had a mammogram in the past two years.
- Most (87%) of Knox County women had a clinical breast exam at some time in their life, and 43% had one within the past year. More than three-fifths (62%) of women ages 40 and over had a clinical breast exam in the past two years.
- Eighty-six percent (86%) of Knox County women had a Pap smear, and 34% reported having had the exam in the past year. Fifty-nine percent (59%) of women had a Pap smear in the past three years. The 2016 BRFSS indicated that 82% of Ohio and 80% of U.S. women ages 21-65 had a Pap smear in the past three years.

Women's Health Concerns

- Women used the following as their usual source of services for female health concerns: private gynecologist (49%), general or family physician (18%), family planning clinic (6%), nurse practitioner/physician assistant (4%), multiple places (3%), community health center (2%), midwife (2%), and some other place (2%). Fifteen percent (15%) of women indicated they did not have a usual source of services for female health concerns.
- Five percent (5%) of Knox County women survived a heart attack and 1% survived a stroke at some time in their life.
- Major risk factors for cardiovascular disease include smoking, obesity, high blood cholesterol, high blood pressure, physical inactivity, and diabetes. In Knox County, the 2018 health assessment has identified that:
 - 39% of women were obese (2016 BRFSS reports 32% for Ohio and 2016 BRFSS 30% for U.S.)
 - 34% were diagnosed with high blood cholesterol (2015 BRFSS reports 36% for Ohio and 35% for U.S.)
 - 32% were diagnosed with high blood pressure (2015 BRFSS reports 31% for Ohio and 30% for U.S.)
 - 17% women were current smokers (2016 BRFSS reports 21% for Ohio and 2016 BRFSS 14% for U.S.)
 - 11% had been diagnosed with diabetes (2016 BRFSS reports 11% for Ohio and 2016 BRFSS 11% for U.S.)
- From 2014-2016, major cardiovascular diseases (heart disease and stroke) accounted for 27% of all female deaths in Knox County (*Source: Ohio Public Health Data Warehouse, 2014-2016*).

Knox County Female Leading Causes of Death, 2014-2016 Total Female Deaths: 939

1. Heart Diseases (22% of all deaths)
2. Cancers (18%)
3. Alzheimer's disease (8%)
4. Chronic Lower Respiratory Diseases (6%)
5. Stroke (5%)

(Source: Ohio Public Health Data Warehouse, 2014-2016)

Ohio Female Leading Causes of Death, 2014 – 2016 Total Female Deaths: 176,669

1. Heart Diseases (22% of all deaths)
2. Cancers (21%)
3. Chronic Lower Respiratory Diseases (6%)
4. Stroke (6%)
5. Alzheimer's disease (5%)

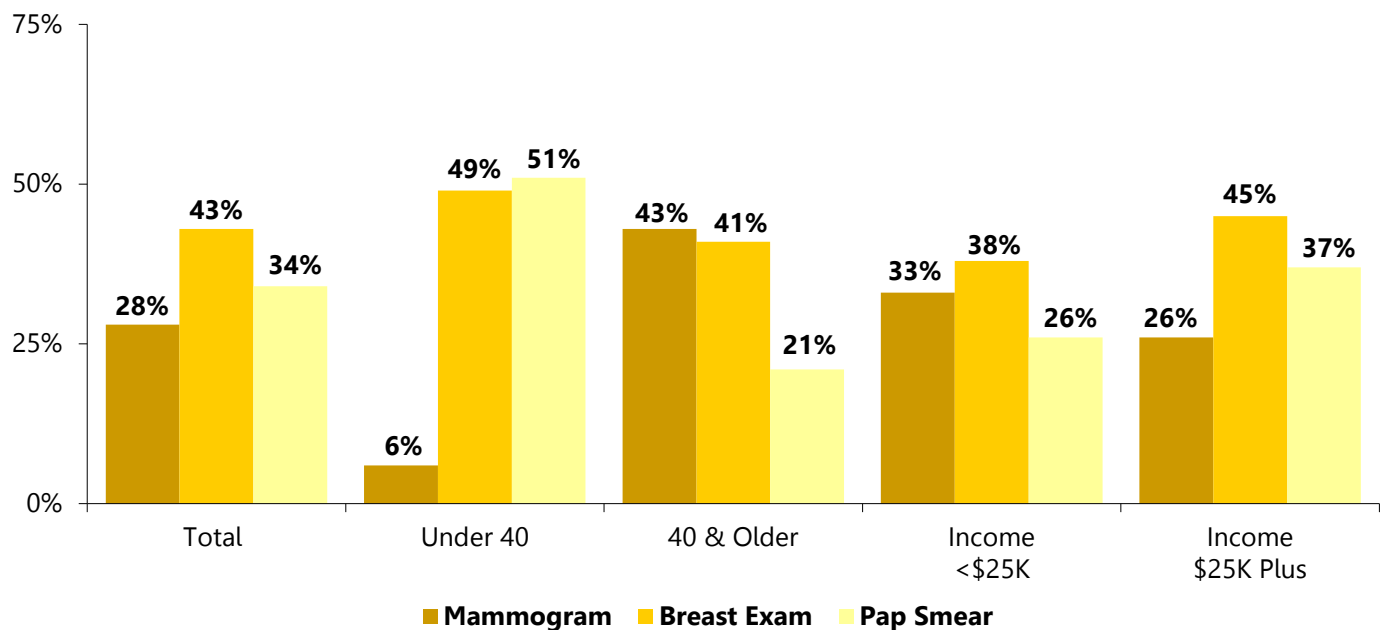
(Source: Ohio Public Health Data Warehouse, 2014-2016)

Pregnancy

- More than one-third (35%) of Knox County women had been pregnant in the past 5 years.
- Thinking back to their last pregnancy, 45% of women wanted to be pregnant then, 13% wanted to be pregnant sooner, 10% did not want to be pregnant then or any time in the future, 9% wanted to be pregnant later, and 24% of women did not recall.
- During their last pregnancy, Knox County women did the following: took a multi-vitamin with folic acid during pregnancy (61%), got a prenatal appointment in the first 3 months (54%), took a multi-vitamin with folic acid pre-pregnancy (31%), took folic acid during pregnancy (25%), got a dental exam (23%), experienced depression (20%), took folic acid pre-pregnancy (13%), received WIC benefits (11%), smoked cigarettes or used other tobacco products (10%), used marijuana (8%), experienced domestic violence (3%), consumed alcoholic beverages (3%), looked for option for an unwanted pregnancy (3%), and used e-cigarettes (3%).

The following graph shows the percentage of Knox County females who had various health exams in the past year. Examples of how to interpret the information shown on the graph include: 28% of Knox County females had a mammogram within the past year, 43% had a clinical breast exam, and 34% had a Pap smear.

Knox County Women's Health Exams Within the Past Year



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

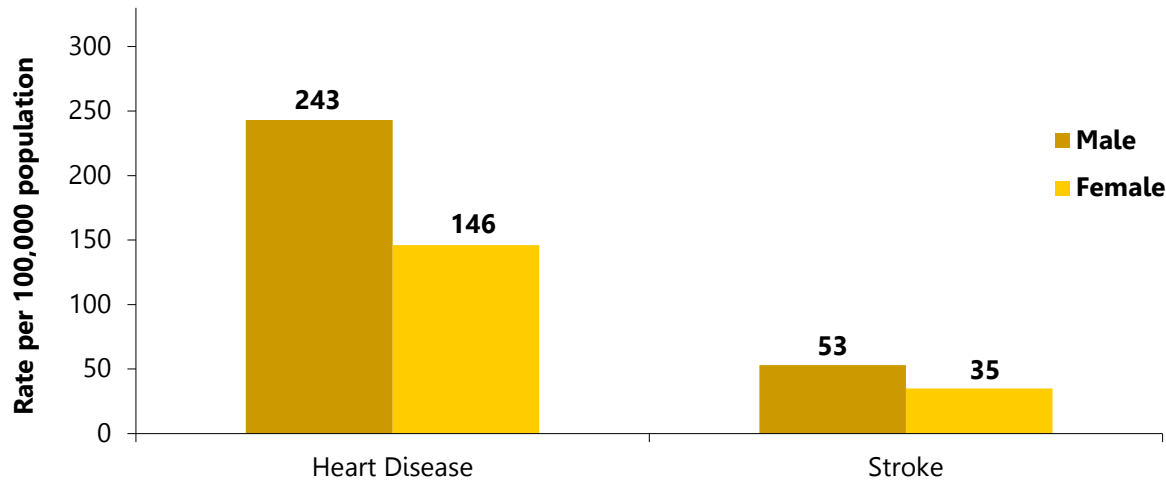
Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Had a mammogram in the past two years (age 40 and older)	65%	74%	72%
Had a Pap smear in the past 3 years	59%	82%‡	80%‡

‡ Ohio and U.S. BRFSS reports women ages 21-65

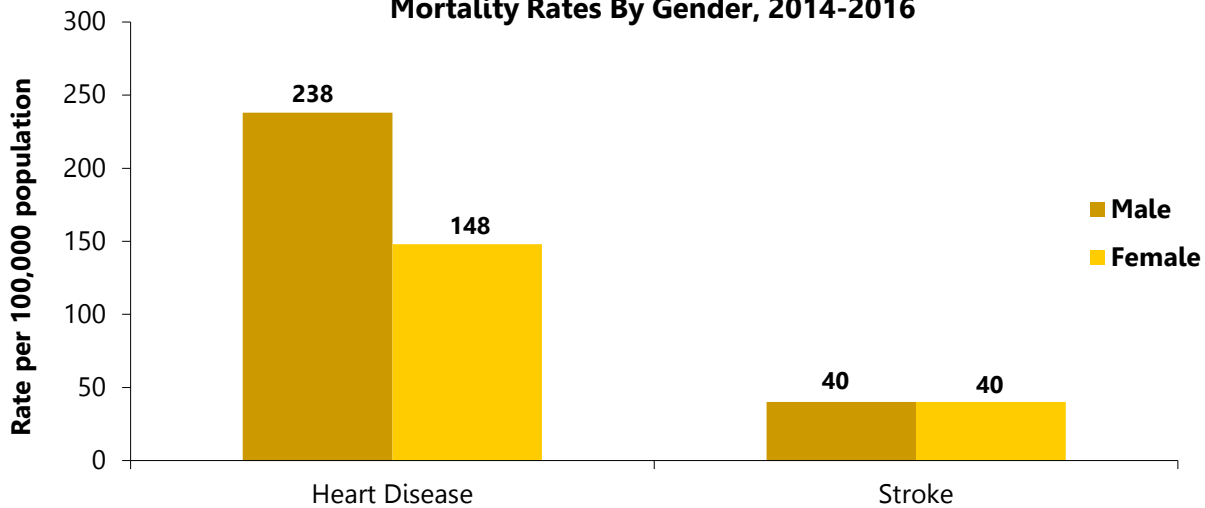
The following graphs show the Knox County and Ohio age-adjusted mortality rates per 100,000 population for cardiovascular diseases. The graphs show:

- From 2014-2016, the Knox County and Ohio female age-adjusted mortality rates were lower than the male rates for heart disease.
- From 2014-2016, the Knox County female age-adjusted mortality rate was lower than the male rate for stroke.

Knox County Age-Adjusted Heart Disease Mortality Rates By Gender, 2014-2016



Ohio Age-Adjusted Heart Disease and Stroke Mortality Rates By Gender, 2014-2016

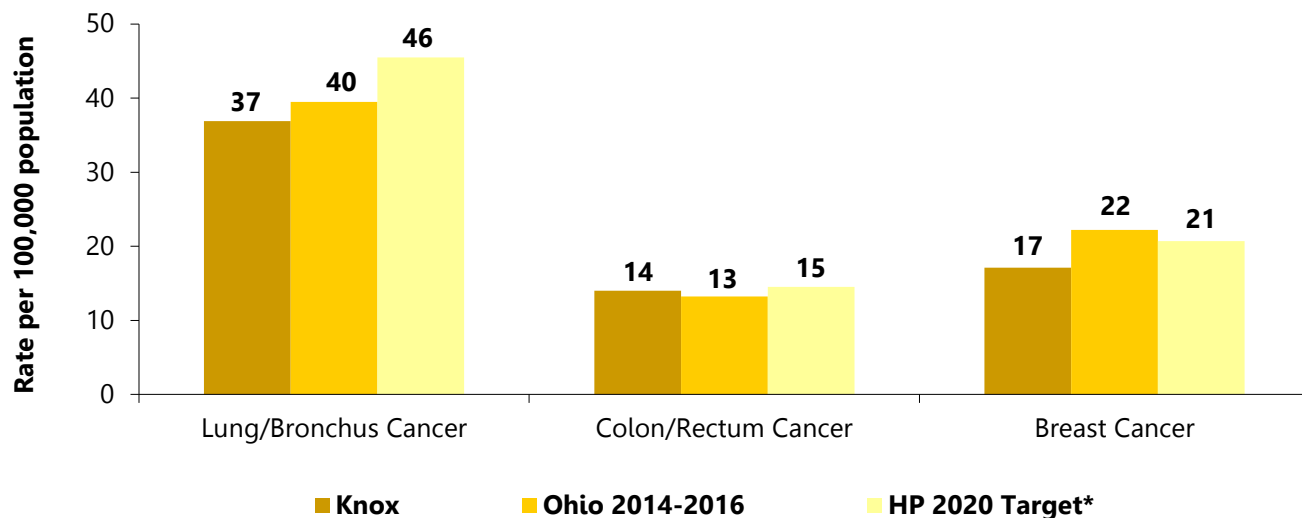


(Source: Ohio Public Health Data Warehouse, 2014-2016)

The following graph shows the Knox County and Ohio age-adjusted cancer mortality rates per 100,000 population for women with comparison to Healthy People 2020 objectives. The graph shows:

- From 2014 to 2016, the Knox County age-adjusted mortality rate for breast cancer was lower than both the Ohio rate and Healthy People 2020 target objective.

Knox County Female Age-Adjusted Cancer Mortality Rates, 2014-2016



(Source: Ohio Public Health Data Warehouse, 2014-2016)

*Note: The Lung and Colon/Rectum Cancer Healthy People 2020 target rates are not gender specific

What Can I Do to Reduce My Risk of Breast Cancer?

Many factors can influence your breast cancer risk, and most women who develop breast cancer do not have any known risk factors or a history of the disease in their families. However, you can help lower your risk of breast cancer in the following ways:

- Keep a healthy weight.
- Exercise regularly (at least four hours a week).
- Get enough sleep.
- Don't drink alcohol, or limit alcohol drinks to no more than one per day.
- Avoid exposures to chemicals that can cause cancer (carcinogens).
- Try to reduce your exposure to radiation during medical tests like mammograms, X-rays, CT scans, and PET scans.
- If you are taking, or have been told to take, hormone replacement therapy or oral contraceptives (birth control pills), ask your doctor about the risks and find out if it is right for you.
- Breastfeed your babies, if possible.

If you have a family history of breast cancer or inherited changes in your BRCA1 and BRCA2 genes, you may have a higher breast cancer risk. Talk to your doctor about these ways of reducing your risk;

- Anti-estrogens or other medicines that block or decrease estrogen in your body.
- Surgery to reduce your risk of breast cancer—
 - Prophylactic (preventive) mastectomy (removal of breast tissue).
 - Prophylactic (preventive) salpingo-oophorectomy (removal of the ovaries and fallopian tubes).

(Source: Centers for Disease Control and Prevention, What Can I Do to Reduce My Risk of Breast Cancer? Updated September 27th, 2017)

Healthcare Access: Men's Health

Key Findings

In 2018, 45% of Knox County males over the age of 50 had a Prostate-Specific Antigen (PSA) test in the past year. Nearly half (45%) of Knox County men had a digital rectal exam in their lifetime, and 19% had one in the past year. More than one-third (36%) of men had been diagnosed with high blood pressure, 33% had high blood cholesterol, and 14% were identified as smokers, which, along with obesity (35%), are known risk factors for cardiovascular diseases.

Men's Health Screenings

- Almost half (45%) of Knox County men had a digital rectal exam in their lifetime, and 19% had one in the past year.
- More than one-fourth (27%) of men had a Prostate-Specific Antigen (PSA) test within the past year.
- More than three-quarters (78%) of males age 50 and over had a PSA test at some time in their life, and 45% had one in the past year.

Men's Health Concerns

- In 2018, 9% of men had a heart attack and 5% had a stroke at some time in their life.
- Major risk factors for cardiovascular disease include smoking, obesity, high blood cholesterol, high blood pressure, physical inactivity, and diabetes. In Knox County, the 2018 health assessment identified that:
 - 35% of men were obese (2016 BRFSS reports 31% for Ohio and 30% for U.S.)
 - 36% were diagnosed with high blood pressure (2015 BRFSS reports 38% for Ohio and 34% for U.S.)
 - 33% were diagnosed with high blood cholesterol (2015 BRFSS reports 38% for Ohio and for U.S.)
 - 14% of all men were current smokers (2016 BRFSS reports 25% for Ohio and 19% for U.S.)
 - 12% had been diagnosed with diabetes (2016 BRFSS reports 12% for Ohio and 11% for U.S.)

Knox County Male Leading Causes of Death, 2014 – 2016 Total Male Deaths: 914

1. Heart Diseases (26% of all deaths)
2. Cancers (23%)
3. Chronic Lower Respiratory Diseases (6%)
4. Stroke (5%)
5. Accidents, Unintentional Injuries (5%)

(Source: Ohio Public Health Data Warehouse)

Ohio Male Leading Causes of Death, 2014 – 2016 Total Male Deaths: 175,247

1. Heart Diseases (25% of all deaths)
2. Cancers (23%)
3. Accidents, Unintentional Injuries (8%)
4. Chronic Lower Respiratory Diseases (6%)
5. Stroke (4%)

(Source: Ohio Public Health Data Warehouse)

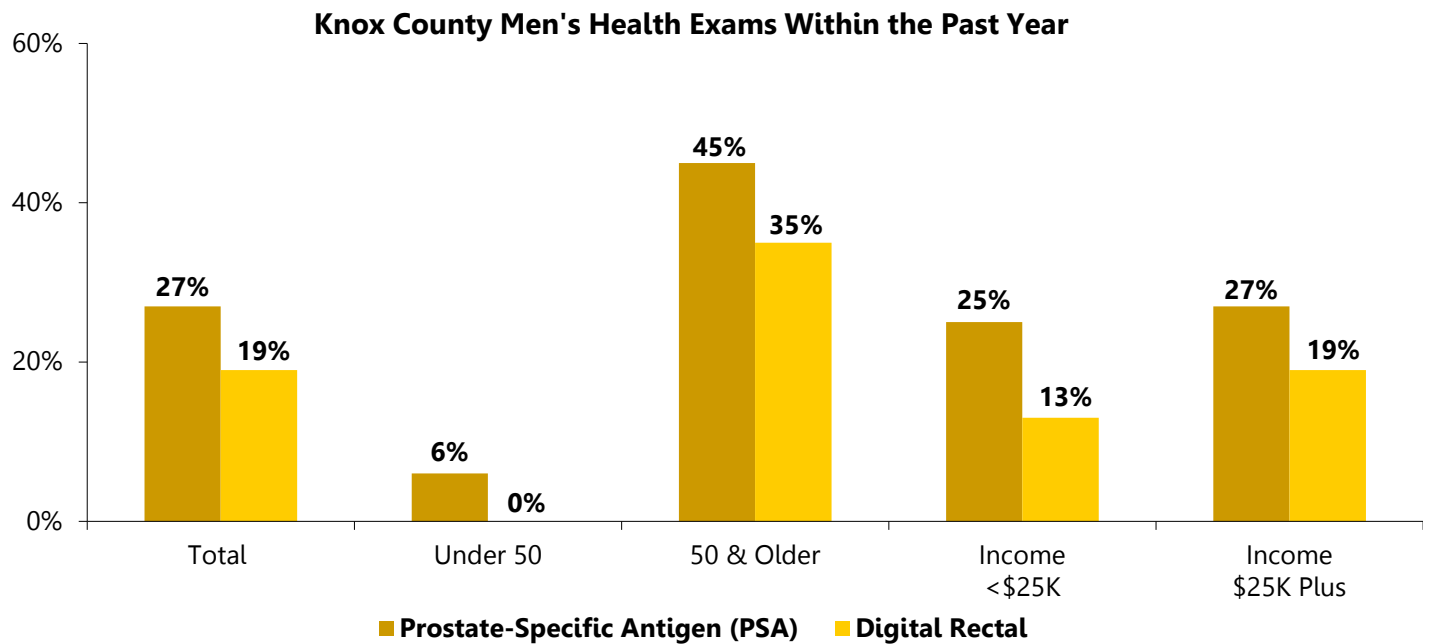
19% of Knox County males, had a digital rectal exam in the past year.

- From 2014-2016, the leading cancer deaths for Knox County males were lung, prostate, and pancreatic cancers. Statistics from the same period for Ohio males indicate that lung, prostate, and colon and rectum cancers were the leading cancer deaths (Source: Ohio Public Health Data Warehouse, 2014-2016).

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Had a PSA test in within the past two years (age 40 and over)	54%	39%	40%
Had a digital rectal exam within the past year (age 50 and over)	35%	N/A	N/A

N/A – Not Available

The following graph shows the percentage of Knox County male adults that had various health exams in the past year. Examples of how to interpret the information shown on the graph include: 27% of Knox County males had a PSA test within the past year, and 19% had a digital rectal exam.



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Men's Health Data

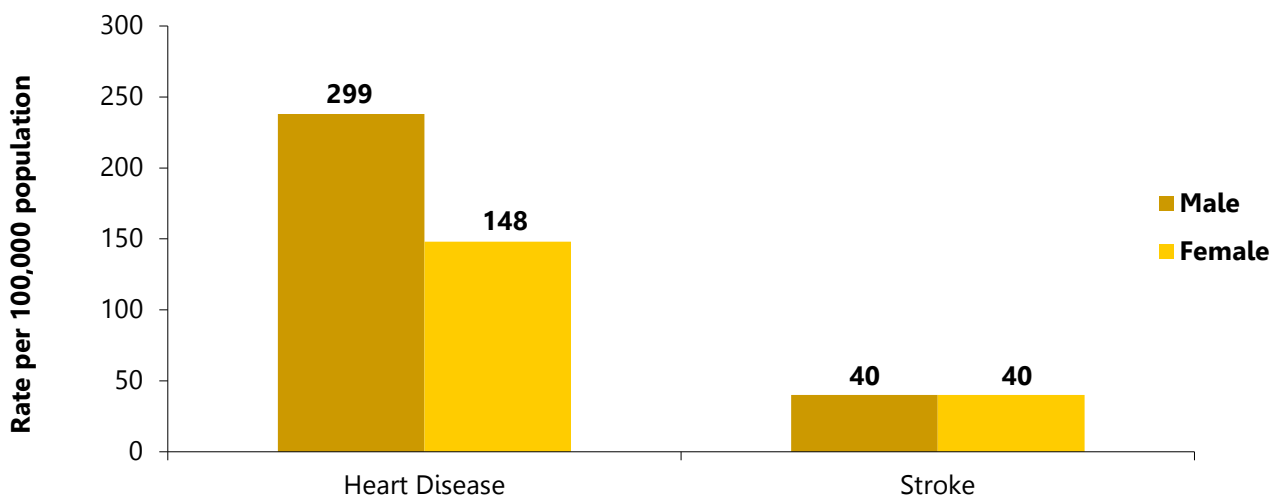
- Approximately 12% of adult males ages 18 years or older reported fair or poor health.
- 18% of adult males in the U.S. currently smoke.
- Of the adult males in the U.S., 32% had 5 or more drinks in 1 day at least once in the past year.
- Only 56% of adult males in the U.S. met the 2008 federal physical activity guidelines for aerobic activity through leisure-time aerobic activity.
- 35% of men 20 years and over are obese.
- There are 12% of males under the age of 65 without healthcare coverage.
- The leading causes of death for males in the United States are heart disease, cancer and accidents (unintentional injuries).

(Source: CDC, National Center for Health Statistics, Men's Health, Fast Stats, May 3, 2017)

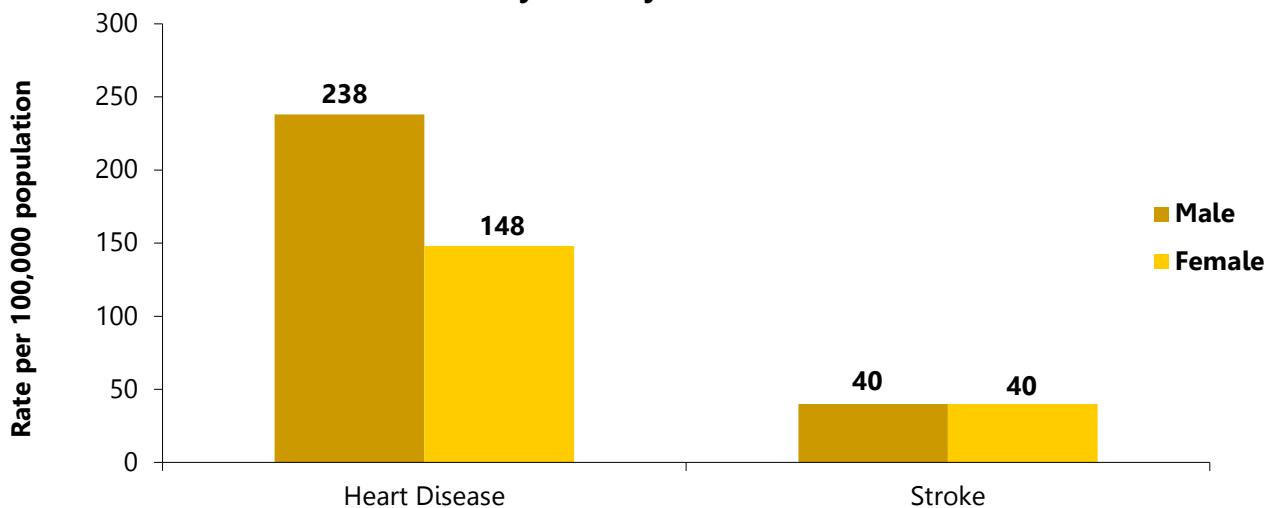
The following graphs show the Knox County and Ohio age-adjusted mortality rates per 100,000 population for cardiovascular diseases by gender. The graphs show:

- From 2014-2016, the Knox County and Ohio male age-adjusted mortality rates were higher than the female rates for heart disease.
- The Knox County male age-adjusted heart disease mortality rate was higher than the Ohio male rate.
- From 2014-2016 the Knox County and Ohio male age-adjusted mortality rates were the same as the female rates for stroke.

Knox County Age-Adjusted Heart Disease Mortality Rates By Gender, 2014-2016



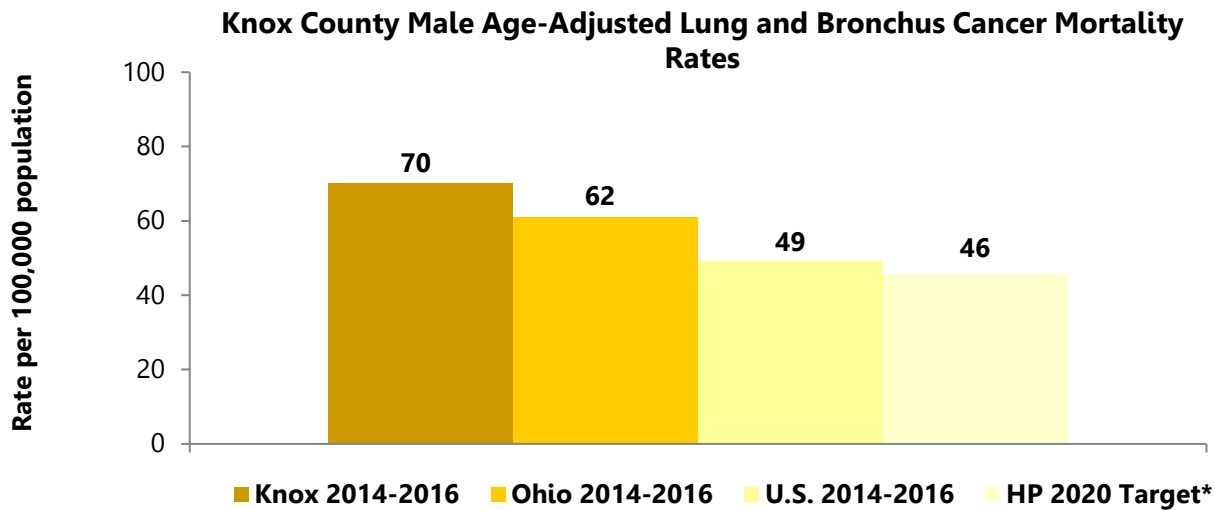
Ohio Age-Adjusted Heart Disease and Stroke Mortality Rates By Gender, 2014-2016



(Source: Ohio Public Health Data Warehouse, 2014-2016)

The following graph shows the Knox County age-adjusted lung cancer mortality rates per 100,000 population for men with comparison to the Healthy People 2020 objective. The graph shows:

- From 2014-2016, the Knox County age-adjusted mortality rate for male lung cancer was higher than the Ohio and U.S. rate and the Healthy People 2020 objective.



Note: The Healthy People 2020 target rates are not gender specific.
 (Sources: CDC Wonder 2014-2016, Ohio Public Health Data Warehouse 2014-2016, and Healthy People 2020)

Prostate Cancer Awareness

- Prostate cancer is the most common cancer among American men. Most prostate cancers grow slowly and don't cause any health problems in men who have them.
- Men can have different symptoms for prostate cancer. Some men do not have symptoms at all. Some symptoms of prostate cancer are difficulty starting urination, frequent urination (especially at night), weak or interrupted flow of urine, and blood in the urine or semen.
- There is no way to know for sure if you will get prostate cancer. Men have a greater chance of getting prostate cancer if they are 50 years old or older, are African-American, or have a father, brother, or son who has had prostate cancer.
- Two tests are commonly used to screen for prostate cancer:
 - Digital rectal exam (DRE):** A doctor, nurse, or other healthcare professional places a gloved finger into the rectum to feel the size, shape, and hardness of the prostate gland.
 - Prostate specific antigen test (PSA):** PSA is a substance made by the prostate. The PSA test measures the level of PSA in the blood, which may be higher in men who have prostate cancer. However, other conditions such as an enlarged prostate, prostate infection and certain medical procedures also may increase PSA levels.

(Source: Center for Disease Control and Prevention, Prostate Cancer Awareness, Updated September 21, 2017)

Healthcare Access: Oral Health

Key Findings

Just over three-fifths (63%) of Knox County adults had visited a dentist or dental clinic in the past year. When asked the main reason for not visiting a dentist in the past year, 27% said cost.

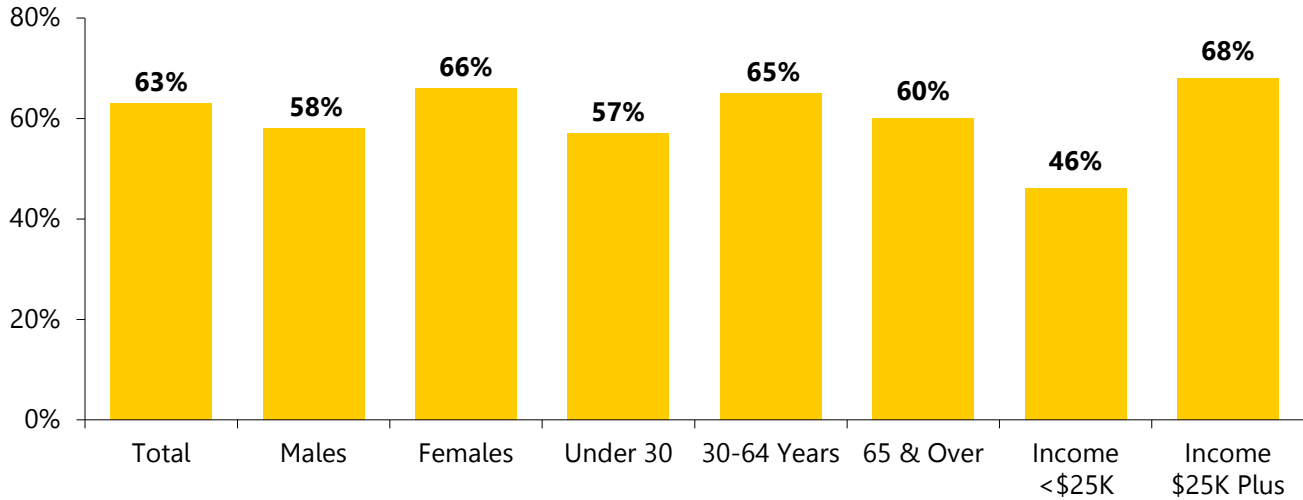
Access to Dental Care

- In the past year, 63% of Knox County adults had visited a dentist or dental clinic, decreasing to 46% of those with incomes less than \$25,000.
- The 2016 BRFSS reported that 68% of Ohio adults and 66% of U.S. adults had visited a dentist or dental clinic in the previous twelve months.
- When asked the main reason for not visiting a dentist in the past year, 27% said cost; 23% had no oral health problems; 18% had dentures; 10% said fear, apprehension, nervousness, pain, and dislike going; 2% said their dentist did not accept their medical coverage; 1% did not have/know a dentist; and 10% said other reasons. Nine percent (9%) of adults listed multiple reasons for not visiting the dentist in the past year.
- Nearly half (47%) of adults had one or more of their permanent teeth removed, increasing to 79% of those ages 65 and over. The 2016 BRFSS reported that 45% of Ohio and 43% of U.S. adults had one or more permanent teeth removed.
- One-fifth (21%) of Knox County adults ages 65 and over had all of their permanent teeth removed. The 2016 BRFSS reported that 17% of Ohio and 14% of U.S. adults ages 65 and over had all of their permanent teeth removed.

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Adults who had visited the dentist (in the past year)	63%	68%	66%
Adults who had one or more permanent teeth removed	47%	45%	43%
Adults 65 years and older who had all of their permanent teeth removed	21%	17%	14%

The following graph provides information about the frequency of Knox County adult dental visits. Examples of how to interpret the information on the graph include: 63% of all Knox County adults had been to the dentist in the past year, including 57% of those under the age of 30, and 46% of those with incomes less than \$25,000.

Knox County Adults Visiting a Dentist in the Past Year



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Adult Oral Health	Within the Past Year	Within the Past 2 Years	Within the Past 5 Years	5 or More years	Never
Time Since Last Visit to Dentist/Dental Clinic					
Males	58%	11%	10%	18%	1%
Females	66%	13%	9%	8%	1%
Total	63%	12%	9%	13%	1%

Facts About Adult Oral Health

- The baby boomer generation is the first where most people will keep their natural teeth over their entire lifetime. This is largely because of the benefits of water fluoridation and fluoride toothpaste. However, threats to oral health, including tooth loss, continue throughout life.
- The major risks for tooth loss are tooth decay and gum disease that may increase with age because of problems with saliva production; receding gums that expose "softer" root surfaces to decay-causing bacteria; or difficulties flossing and brushing because of poor vision, cognitive problems, chronic disease, and physical limitations.
- Although more adults are keeping their teeth, many continue to need treatment for dental problems. This need is even greater for members of some racial and ethnic groups—about 3 in 4 Hispanics and non-Hispanic black adults have an unmet need for dental treatment, as do people who are poor. These individuals are also more likely to report having poor oral health.
- In addition, some adults may have difficulty accessing dental treatment. For every adult aged 19 years or older without medical insurance, there are three who don't have dental insurance.
- Oral health problems include the following: untreated tooth decay, gum disease, tooth loss, oral cancer, and chronic diseases such as arthritis, heart disease, and strokes.

(Source: Centers for Disease Control and Prevention, Division of Oral Health, Adult Oral Health, October 23, 2017)

Health Behaviors: Health Status Perceptions

Key Findings

In 2018, more than half (54%) of Knox County adults rated their health status as excellent or very good. Conversely, 10% of adults described their health as fair or poor, increasing to 21% of those with incomes less than \$25,000.

Adults Who Rated General Health Status Excellent or Very Good

- Knox County 54% (2018)
- Ohio 51% (2016)
- U.S. 52% (2016)

(Source: BRFSS 2016 for Ohio and U.S.)

General Health Status

- In 2018, more than half (54%) of Knox County adults rated their health as excellent or very good. Knox County adults with higher incomes (59%) were most likely to rate their health as excellent or very good, compared to 42% of those with incomes less than \$25,000.
- Ten percent (10%), or 4,513 adults, rated their health as fair or poor. The 2016 BRFSS has identified that 18% of Ohio and 17% of U.S. adults self-reported their health as fair or poor.
- Knox County adults were most likely to rate their health as fair or poor if they:
 - Had been diagnosed with diabetes (30%)
 - Had an annual household income under \$25,000 (21%)
 - Had high blood pressure or high blood cholesterol (18%)
 - Were 65 years of age or older (18%)

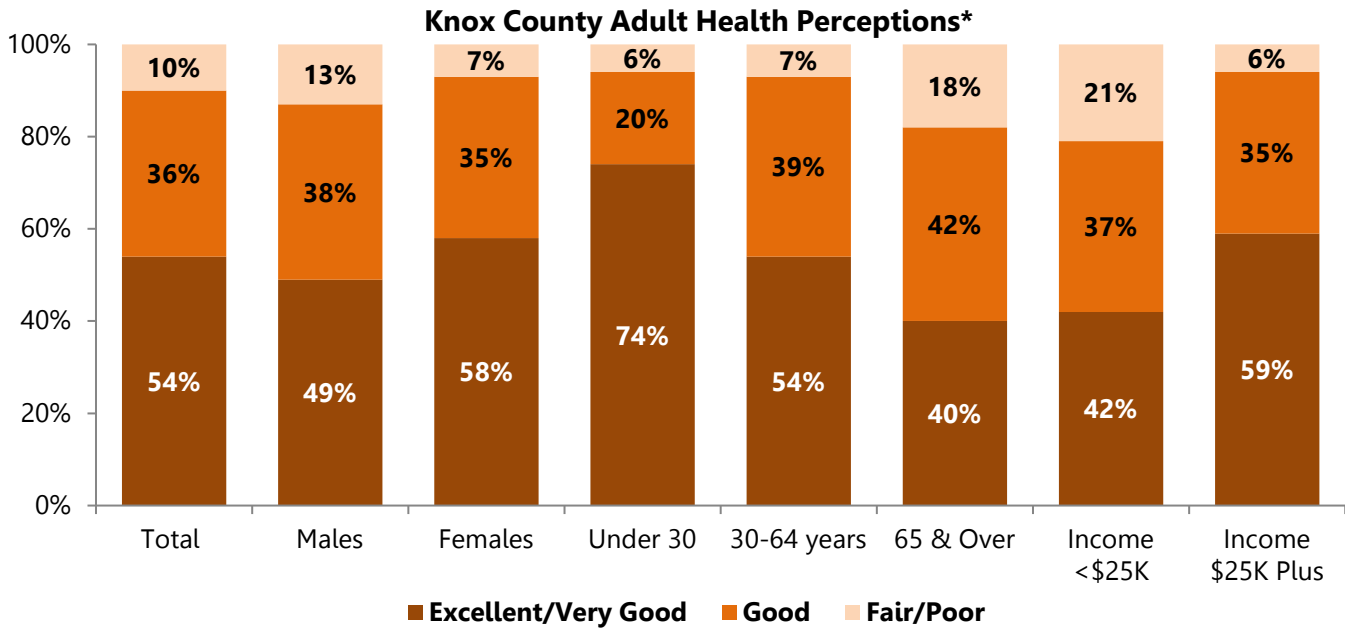
Physical Health Status

- More than one-fifth (22%) of Knox County adults rated their physical health as not good on four or more days in the previous month.
- Knox County adults reported their physical health as not good on an average of 4.0 days in the previous month. Ohio and U.S. adults reported their physical health as not good on an average of 4.0 days and 3.7 days, respectively, in the previous month (Source: 2016 BRFSS Data as compiled by 2018 County Health Rankings).
- Knox County adults were most likely to rate their physical health as not good if they:
 - Had an annual household income under \$25,000 (38%)
 - Were 65 years of age or older (26%)

Mental Health Status

- In 2018, 28% of Knox County adults rated their mental health as not good on four or more days in the previous month.
- Knox County adults reported their mental health as not good an average of 4.2 days in the previous month. Ohio and U.S. adults reported their mental health as not good on an average of 4.3 days and 3.8 days, respectively, in the previous month (Source: 2016 BRFSS Data as compiled by 2018 County Health Rankings).
- More than one-fourth (28%) of adults reported that poor mental or physical health or emotional health kept them from doing usual activities such as self-care, work, or recreation in the past 30 days.
- Knox County adults were most likely to rate their mental health as not good if they:
 - Had an annual household income under \$25,000 (44%)
 - Were female (36%)

The following graph shows the percentage of Knox County adults who described their personal health status as excellent/very good, good, and fair/poor. Examples of how to interpret the information include: 54% of all Knox County adults, 74% of those under age 30, and 40% of those ages 65 and older rated their health as excellent or very good. The table shows the percentage of adults with poor physical and mental health in the past 30 days.



*Respondents were asked: "Would you say that in general your health is excellent, very good, good, fair or poor?"

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Health Status	No Days	1-3 Days	4-5 Days	6-7 Days	8 or More Days
Physical Health Not Good in Past 30 Days*					
Males	46%	20%	5%	2%	13%
Females	46%	20%	11%	3%	10%
Total	46%	20%	8%	3%	11%
Mental Health Not Good in Past 30 Days*					
Males	62%	12%	4%	2%	10%
Females	40%	20%	10%	3%	21%
Total	50%	16%	7%	2%	16%

*Totals may not equal 100% as some respondents answered "Don't know/Not sure".

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Rated health as excellent or very good	54%	51%	52%
Rated health as fair or poor	10%	18%	17%
Average days that physical health not good in past month	4.0	4.0‡	3.7‡
Average days that mental health not good in past month	4.2	4.3‡	3.8‡

‡2016 BRFSS data as compiled by 2018 County Health Rankings

Health Behaviors: Adult Weight Status

Key Findings

The 2018, 73% of Knox County adults were overweight or obese based on Body Mass Index (BMI). Over one-third (37%) of Knox County adults were obese. The 2016 BRFSS indicates that 32% of Ohio and 30% of U.S. adults were obese as measured by BMI.

Adult Weight Status

- Almost three-fourths (73%) of Knox County adults were either overweight (36%) (approximately 16,247) or obese (37%) (approximately 16,698) by Body Mass Index (BMI). This puts them at elevated risk for developing a variety of diseases.
- Nearly half (49%) of adults were trying to lose weight, 33% were trying to maintain their current weight or keep from gaining weight, and 3% were trying to gain weight. Fifteen percent (15%) of Knox County adults were not doing anything to lose or gain weight.
- Knox County adults did the following to lose weight or keep from gaining weight: ate less food, fewer calories, or foods low in fat (49%); drank more water (49%); exercised (46%); ate a low-carb diet (13%); smoked cigarettes (4%); took diet pills, powders or liquids without a doctor's advice (3%); used a weight loss program (3%); went without eating 24 or more hours (1%); used health coaching (1%); took prescribed medications (1%); participated in a prescribed dietary or fitness program (1%); and bariatric surgery (1%); took laxatives (<1%); and vomited after eating (<1%).

37% of Knox County adults were obese.

Physical Activity

- In Knox County, 51% of adults engaged in some type of physical activity or exercise for at least 30 minutes 3 or more days per week. Thirty percent (30%) of adults exercised 5 or more days per week. More than one-fourth (29%) of adults did not participate in any physical activity in the past week, including 2% who were unable to exercise.
- The CDC recommends that adults participate in moderate exercise for at least 2 hours and 30 minutes every week or vigorous exercise for at least 1 hour and 15 minutes every week. Whether participating in moderate or vigorous exercise, the CDC also recommends muscle-strengthening activities that work all major muscle groups on 2 or more days per week (*Source: CDC, Physical Activity Basics, 2015*).
- Reasons for not exercising included the following: weather (25%); time (22%); self-motivation/willpower (18%); too tired (18%); laziness (13%); pain or discomfort (11%); did not like to exercise (10%); already got enough exercise (9%); could not afford a gym membership (9%); no personal reason (7%); no exercise partner (6%); ill/physically unable (5%); poorly maintained/no sidewalks (5%); afraid of injury (3%); no child care (3%); no gym available (3%); did not enjoy being active (2%); did not know what activities to do (2%); too expensive (2%); neighborhood safety (1%); no walking, biking trails or parks (1%); lack of opportunities for those with physical impairments or challenges (1%); transportation (<1%); and doctor advised them not to exercise (<1%).
- Knox County adults spent an average of 2.5 hours watching TV, 1.5 hours on their cell phone, 1.2 hours on the computer, and 0.2 hours playing video games on an average day of the week.
- In 2016, 26% of Ohio and 23% of U.S. adults reported no leisure-time physical activity in the past month (*Source: 2016 BRFSS*).

- Adults had access to a wellness program through their employer or spouse’s employer with the following features: free/discounted gym membership (16%), lower insurance premiums for participation in wellness program (13%), health risk assessment (12%), gift cards or cash for participation in wellness program (10%), on-site fitness facility (10%), on-site health screenings (9%), free/discounted weight loss program (6%), on-site health education classes (5%), healthier food options in vending machines or cafeteria (5%), free/discounted smoking cessation program (4%), lower insurance premiums for positive changes in health status (4%), gift cards or cash for positive changes in health status (3%), and other features (3%).
- More than one-fourth (26%) of Knox County adults did not have access to any wellness programs.

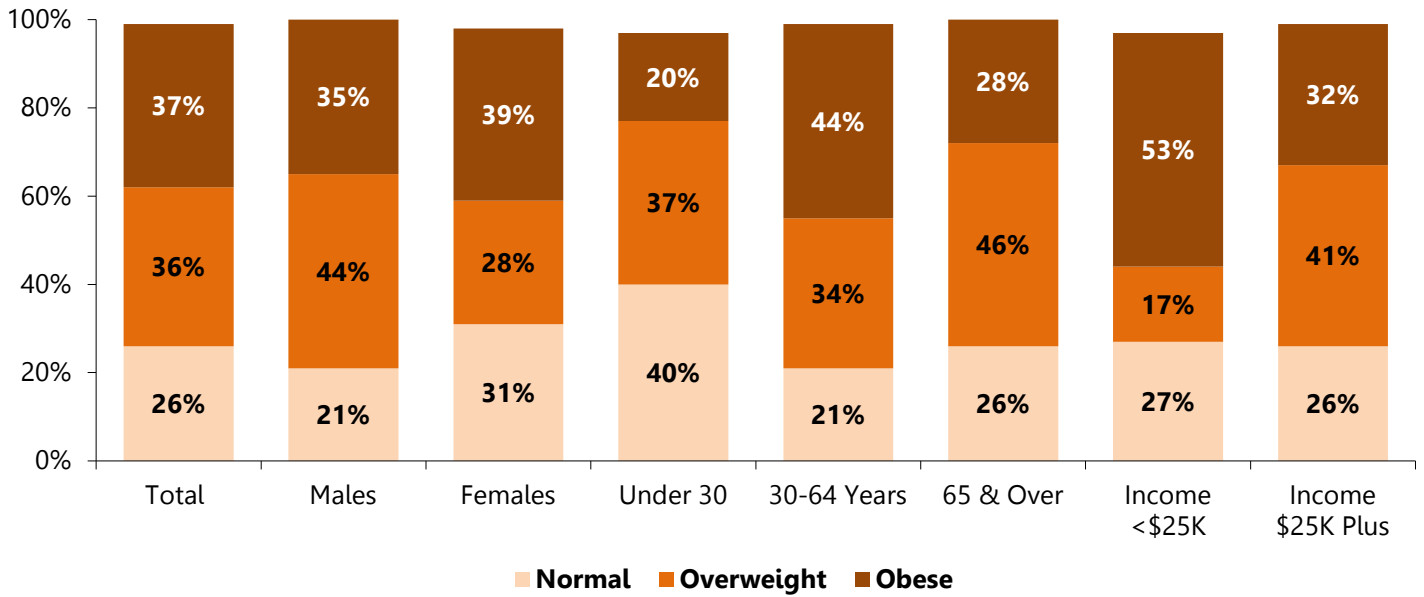
Nutrition

- In 2018, 18% of Knox County adults ate 5 or more servings of fruits and/or vegetables per day. Forty-three percent (43%) ate 3 to 4 servings of fruits and/or vegetables per day, and 37% ate 1 to 2 servings per day. Two percent (2%) reported not eating any fruits and/or vegetables per day.
- One percent (1%) of adults ate 5 or more servings of fruit per day. Eight percent (8%) ate 3 to 4 servings of fruit per day, and 76% ate 1 to 2 servings per day. Fifteen percent (15%) of adults did not eat any fruit.
- Two percent (2%) of adults ate 5 or more servings of vegetables per day. Nineteen percent (19%) ate 3 to 4 servings of vegetables per day, and 76% ate 1 to 2 servings per day. Three percent (3%) of adults did not eat any vegetables.
- The American Cancer Society recommends that adults eat at least 2½ cups (five servings) of fruits and vegetables per day to reduce the risk of cancer and to maintain good health *(Source: American Cancer Society, 2017)*.
- Four percent (4%) of adults consumed 5 or more servings of sugar-sweetened beverages per day. Six percent (6%) drank 3 to 4 servings per day, 40% consumed 1 to 2 servings per day, and 50% consumed 0 servings per day.
- Nine percent (9%) of adults consumed 5 or more servings of caffeinated beverages per day. One-fifth (20%) consumed 3 to 4 servings per day, 45% consumed 1 to 2 servings per day, and 26% drank 0 servings per day.
- Knox County adults purchased their fruit and vegetables from the following places: large grocery stores (86%), local grocery stores (45%), Farmer’s Market (30%), grew their own/garden (29%), Dollar General/Store (5%), food pantry (4%), corner/convenience stores (3%), community garden (1%), Community Supported Agricultural (CSA) (<1%), and other places (4%).
- Knox County adults reported the following barriers in consuming fruits and vegetables: too expensive (10%), did not like the taste (8%), did not know how to prepare them (1%), no variety (1%), stores did not take EBT (1%), no access (<1%), transportation (<1%), and other reasons (3%). Seventy-nine percent (79%) reported no barriers to consuming fruits and vegetables.

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Obese	37%	32%	30%
Overweight	36%	35%	35%

The following graph shows the percentage of Knox County adults who were overweight or obese by Body Mass Index (BMI). Examples of how to interpret the information include: 26% of all Knox County adults were classified as normal weight, 36% were overweight, and 37% were obese.

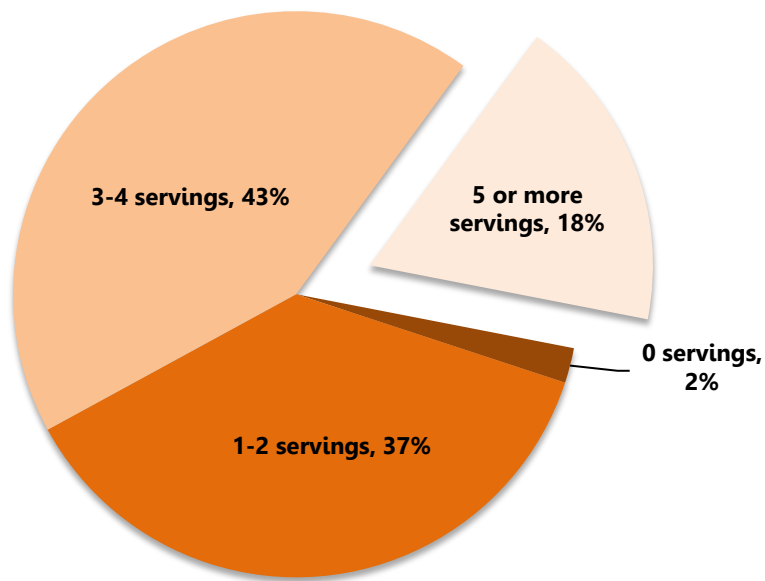
Knox County Adult BMI Classifications



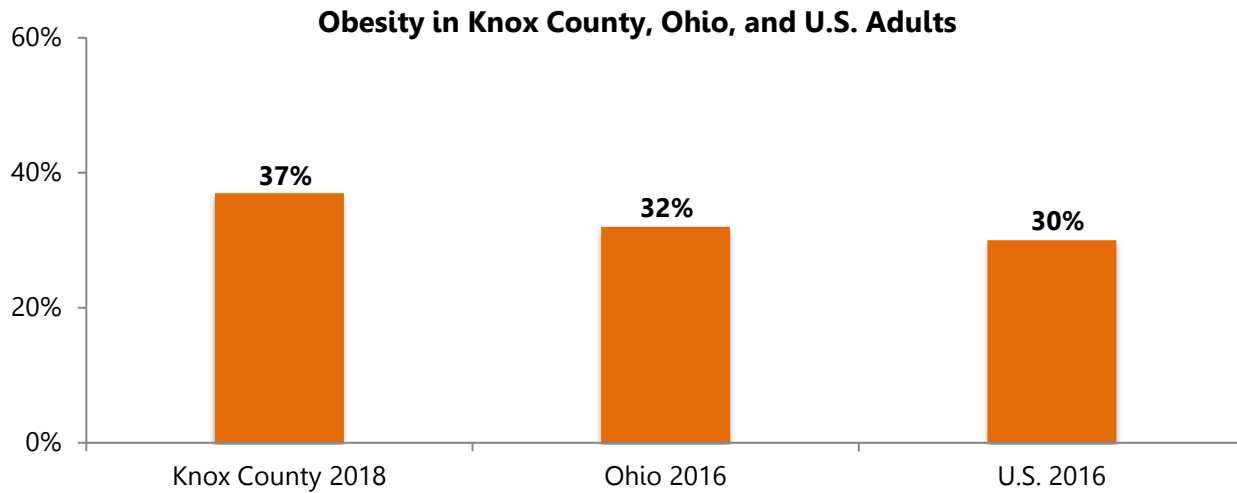
*Percentages may not equal 100% due to the exclusion of data for those who were classified as underweight
 Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

The following pie chart shows the average daily consumption of fruits/vegetables of Knox County adults.

Average Number of Servings of Fruits and Vegetables Per Day for Knox County Adults



The following graph shows the percentage of Knox County adults who were obese compared to Ohio and the U.S. Examples of how to interpret the information include: 37% of all Knox County adults were obese, compared to 32% of Ohio and 30% of U.S. adults.



(Source: 2018 Knox County Health Assessment and 2016 BRFSS)

BMI Measurements

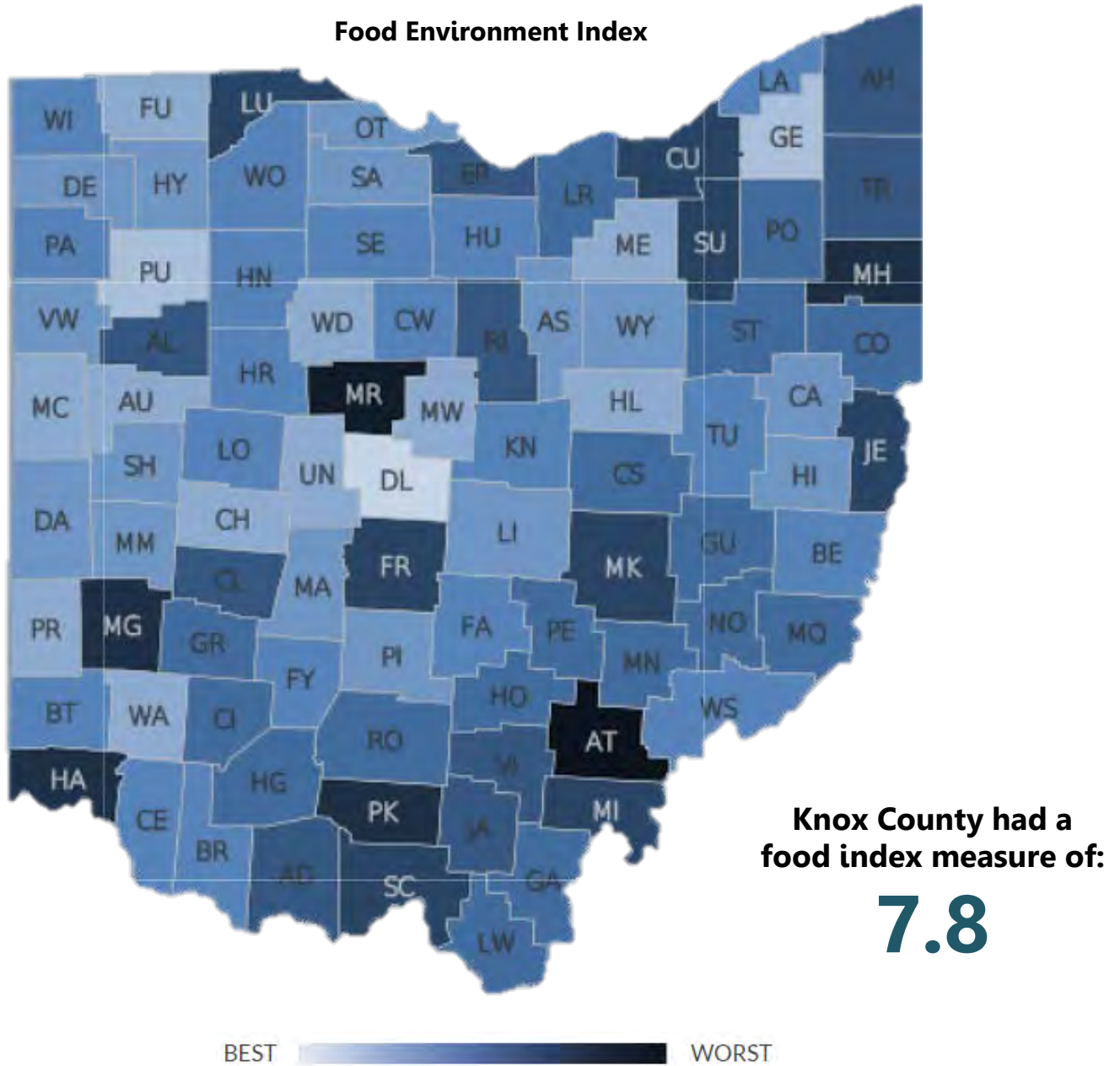
- Body Mass Index (BMI) is a person’s weight in kilograms divided by the square of height in meters.
- A high BMI can be an indicator of high body fat.
- BMI can be used to screen for weight categories that may lead to health problems, but it is not diagnostic of the body fatness or health of any individual.

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal or Healthy Weight
25.0 – 29.9	Overweight
30.0 and above	Obese

(Source: CDC, Healthy Weight: About Adult Weight, updated August 29, 2017)

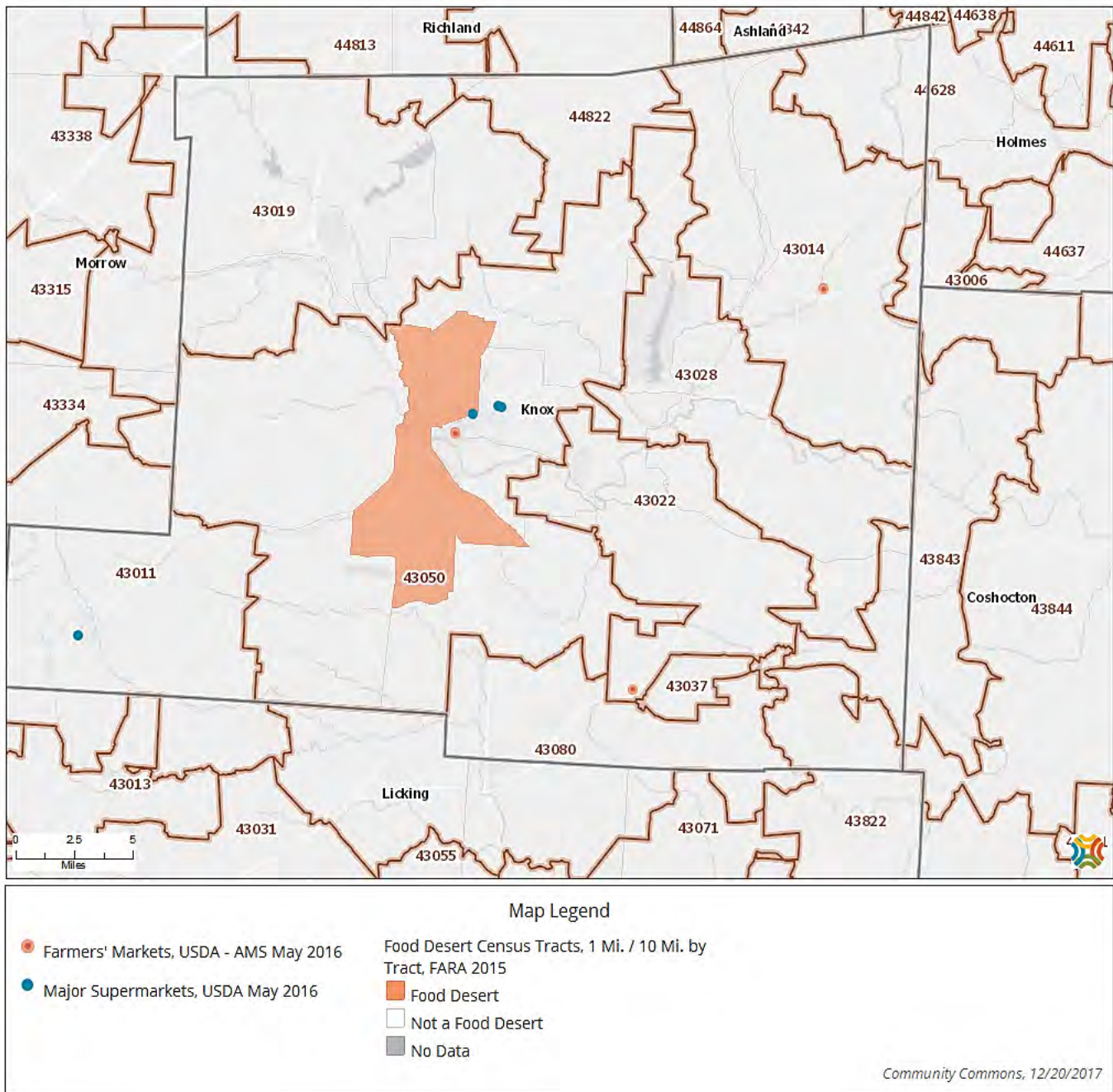
The Food Environment Index measures the quality of the food environment in a county on a scale from 0 to 10 (zero being the worst value in the nation, and 10 being the best). The two variables used to determine the measure are limited access to healthy foods & food insecurity.

- The food environment index in Knox County is 7.8.
- The food environment index in Ohio is 6.6.



(Source: USDA Food Environment Atlas, as compiled by County Health Rankings 2018)

Supermarkets, Farmer's Markets and Food Deserts

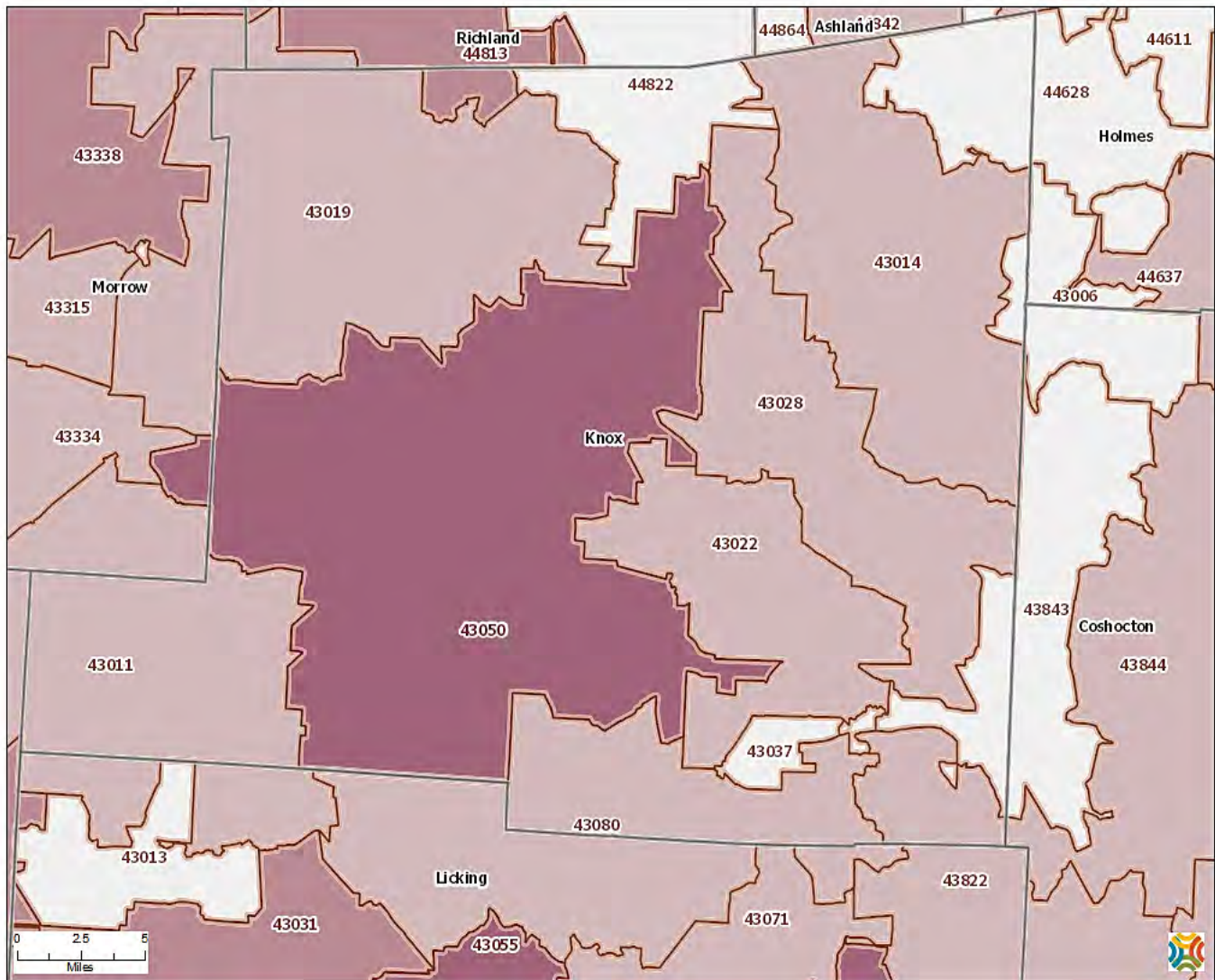


(Sources: U.S. Department of Agriculture, Food and Nutrition Service, May 2016 and U.S. Department of Agriculture, Economic Research Service, USDA – Food Access Research Atlas: 2015, as compiled by Community Commons)

Description of indicator: The Healthy Food Financing Initiative (HFFI) Working Group considers a food desert as a low-income census tract where a substantial number or share of residents has low access to a supermarket or large grocery store. A low-income census tract is defined as any census tract where the poverty rate for that tract is at least 20 percent, or for tracts not located within a metropolitan area, the median family income for the tract does not exceed 80 percent of statewide median family income. Some census tracts that contain supermarkets or large grocery stores may meet the criteria of a food desert if a substantial number or share of people within that census tract is more than 1 mile (urban areas) or 10 miles (rural areas) from the nearest supermarket.

Total Number of Fast Food Restaurants by Zip Code Tract Area

- In 2015, there were 64.0 fast food restaurants per 100,000 population in Knox County



Map Legend

Fast Food Restaurants, Total Establishments by ZCTA, CBP 2015

- Over 100
- 21 - 100
- 6 - 20
- 1 - 5
- No Fast Food Restaurants

Community Commons, 12/20/2017

(Source: US Census Bureau, County Business Patterns: 2015, as compiled by Community Commons)

Description of indicator: This indicator provides information about select businesses and establishments across the United States. Data are from the US Census Bureau's County Business Patterns data series, which classifies businesses using the North American Industry Classification System (NAICS). Map layers include county-level establishment totals and establishment rates per 100,000 population. The population figures used in this analysis are from the US 2010 Decennial Census.

Health Behaviors: Adult Tobacco Use

Key Findings

In 2018, 15% of Knox County adults were current smokers, and 27% were considered former smokers. Two percent (2%) of adults used e-cigarettes in the past year.

In 2018, 15% of Knox County adults were current smokers.

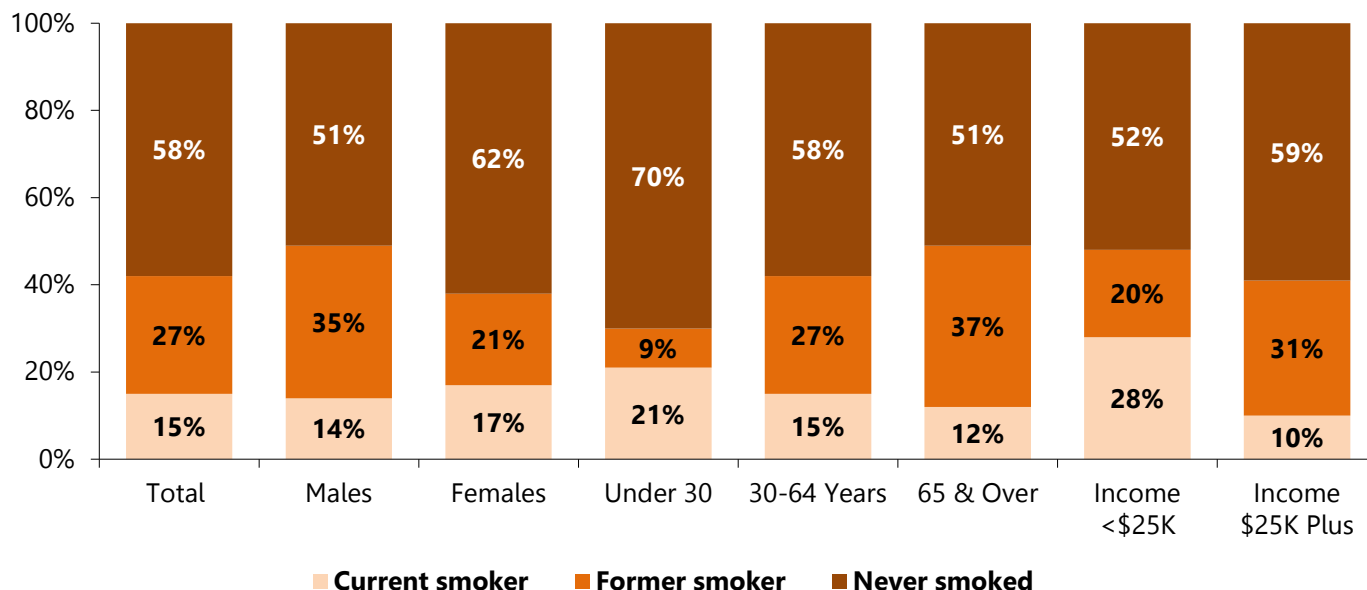
Adult Tobacco Use Behaviors

- Fifteen percent (15%) or 6,770 Knox County adults were current smokers (those who indicated smoking at least 100 cigarettes in their lifetime and currently smoked some or all days). The 2016 BRFSS reported current smoker prevalence rates of 23% for Ohio and 17% for the U.S.
- More than one-fourth (27%) of adults indicated that they were former smokers (smoked 100 cigarettes in their lifetime and now do not smoke). The 2016 BRFSS reported former smoker prevalence rates of 24% for Ohio and 25% for the U.S.
- In 2018, the American Cancer Society (ACS) stated that tobacco use was the most preventable cause of death worldwide and is responsible for the deaths of approximately half of long-term users. Each year, cigarette smoking results in an estimated 480,000 premature deaths including 42,000 from secondhand smoke exposure (Source: *Cancer Facts & Figures, American Cancer Society, 2018*).
- Knox County adult smokers were more likely to:
 - Have never been married (30%)
 - Have incomes less than \$25,000 (28%)
 - Have rated their overall health as poor (28%)
- Knox County adults used the following tobacco products in the past year: cigarettes (19%), chewing tobacco/snuff/dip/betel quid (6%), cigars (4%), e-cigarettes/vape pens (2%), cigarillos (2%), roll-your-own (2%), pipes (1%), hookah (1%), little cigars (1%), pouch (1%), and dissolvable tobacco (<1%).
- Knox County adults had the following rules/practices about smoking in their home: never allowed (87%), allowed sometimes/in some places (5%), no rules about smoking (2%), not allowed with children around (2%), and allowed anywhere (2%). Two percent (2%) did not know.
- Knox County adults reported they would support an ordinance to ban smoking in the following places: vehicle with a minor present (72%), parks or ball fields (51%), multi-unit housing (50%), fairgrounds (48%), and college/university campuses (47%). Twenty-three percent (23%) of adults reported they would not support an ordinance to ban smoking anywhere.
- Nearly half (47%) of Knox County adults believed that e-cigarette vapor was harmful to themselves. Forty-five percent (45%) of adults believed that e-cigarette vapor was harmful to others, and 5% did not believe it was harmful to anyone. Forty-six (46%) of adults did not know if e-cigarette vapor was harmful.

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Current smoker (currently smoke some or all days)	15%	23%	17%
Former smoker (smoked 100 cigarettes in lifetime & now do not smoke)	27%	24%	25%

The following graph shows the percentage of Knox County adults who smoked cigarettes. Examples of how to interpret the information include: 15% of all Knox County adults were current smokers, 27% of all adults were former smokers, and 58% had never smoked.

Knox County Adult Smoking Behaviors*



*Respondents were asked: "Have you smoked at least 100 cigarettes in your entire life? If yes, do you now smoke cigarettes every day, some days or not at all?"

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Smoking and Other Health Risks

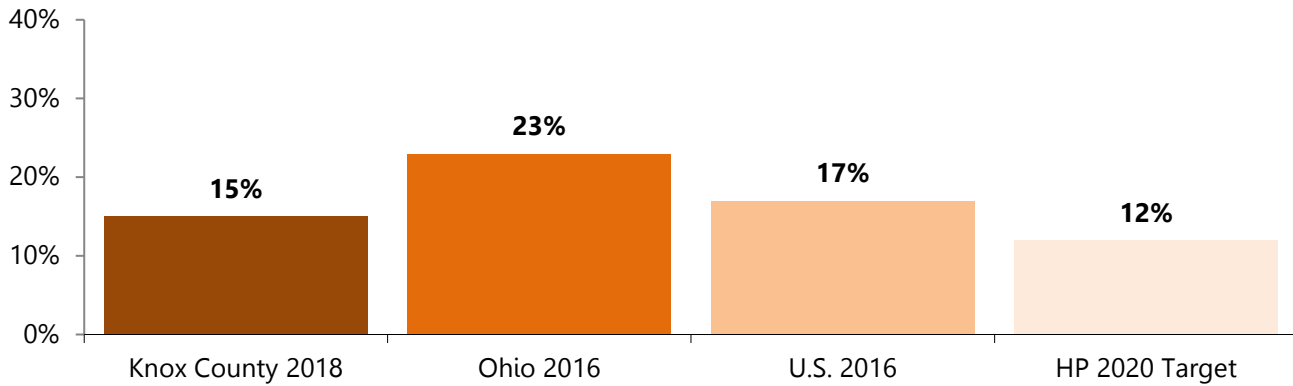
- Smoking can make it harder for a woman to become pregnant and can affect her baby's health before and after birth. Smoking increases risks for:
 - Preterm (early) delivery
 - Stillbirth (death of the baby before birth)
 - Low birth weight
 - Sudden infant death syndrome (known as SIDS or crib death)
 - Ectopic pregnancy
 - Orofacial clefts in infants
- Smoking can also affect men's sperm, which can reduce fertility and also increase risks for birth defects and miscarriage (loss of the pregnancy).
- Smoking can affect bone health.
 - Women past childbearing years who smoke have lower bone density (weaker bones) than women who never smoked and are at greater risk for broken bones.
- Smoking affects the health of your teeth and gums and can cause tooth loss.
- Smoking can increase your risk for cataracts (clouding of the eye's lens that makes it hard for you to see) and age-related macular degeneration (damage to a small spot near the center of the retina, the part of the eye needed for central vision).
- Smoking is a cause of type 2 diabetes mellitus and can make it harder to control. The risk of developing diabetes is 30-40% higher for active smokers than nonsmokers.
- Smoking causes general adverse effects on the body, including inflammation and decreased immune function.
- Smoking is a cause of rheumatoid arthritis.

(Source: CDC, Effects of Cigarette Smoking, Smoking and Other Health Risks, updated May 15, 2017)

The following graph shows Knox County, Ohio, and U.S. adult cigarette smoking rates. This graph shows:

- The Knox County adult cigarette smoking rate was lower than the Ohio and U.S. rates and higher than the Healthy People 2020 target objective.

Healthy People 2020 Objective & Cigarette Smoking Rates



(Source: 2018 Knox County Health Assessment, 2016 BRFSS and Healthy People 2020)

Smoke-Free Living: Benefits and Milestones

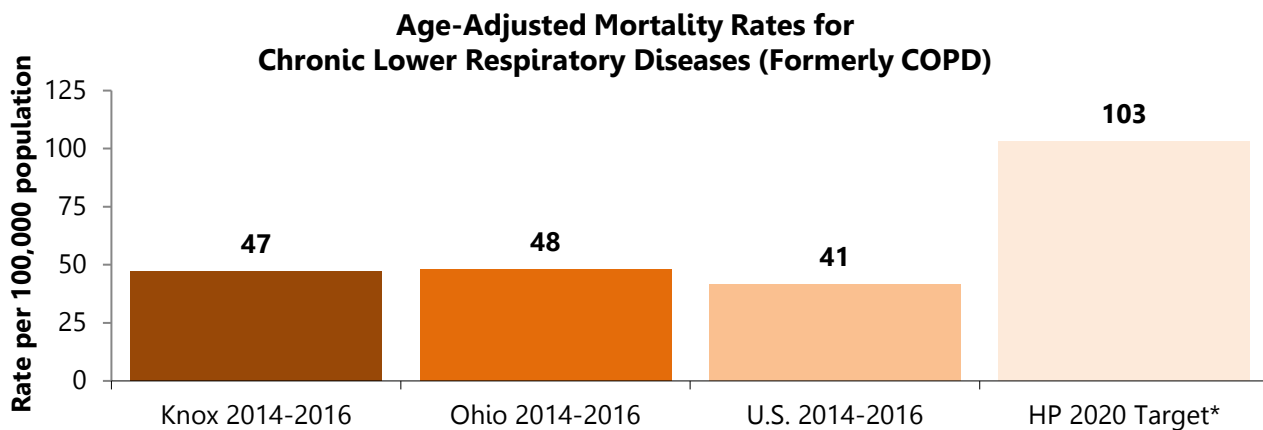
According to the American Heart Association and the U.S. Surgeon General:

- In your first 20 minutes after quitting: your blood pressure and heart rate recover from the cigarette-induced spike.
- After 12 hours of smoke-free living: the carbon monoxide levels in your blood return to normal.
- After two weeks to three months of smoke-free living: your circulation and lung function begin to improve.
- After one to nine months of smoke-free living: clear and deeper breathing gradually returns as coughing and shortness of breath diminishes; you regain the ability to cough productively instead of hacking, which cleans your lungs and reduce your risk of infection.
- After 5 years: Your risk of cancer of the mouth, throat, esophagus, and bladder are cut in half. Your risk of cervical cancer and stroke return to normal.
- After 10 years: You are half as likely to die from lung cancer. Your risk of larynx or pancreatic cancer decreases.
- After 15 years: Your risk of coronary heart disease is the same as a non-smoker's.

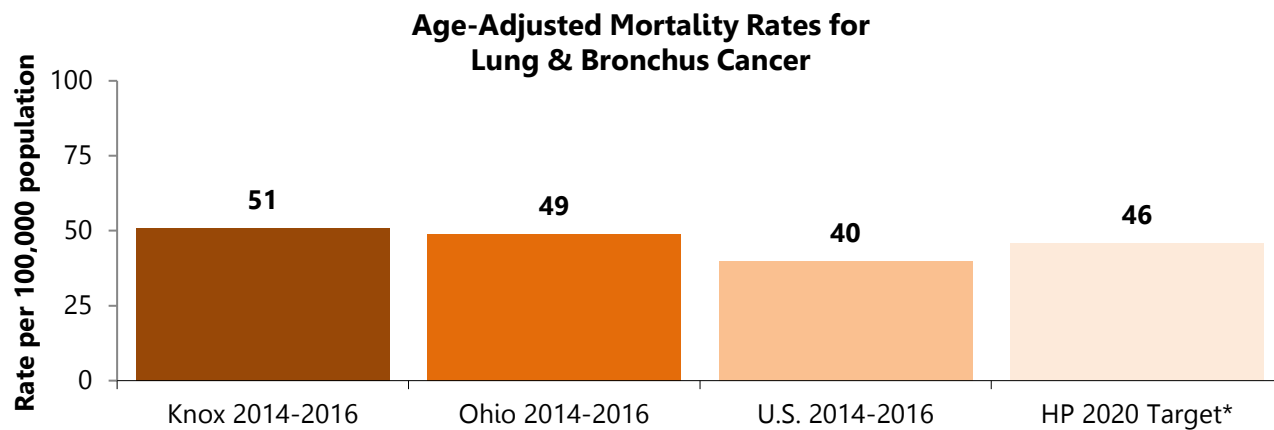
(Source: American Heart Association, *Your Non-Smoking Life*, June 2015)

The following graphs show Knox County, Ohio, and U.S. age-adjusted mortality rates per 100,000 populations for chronic lower respiratory diseases (formerly COPD), as well as for lung and bronchus cancer in comparison with the Healthy People 2020 objective. Knox County age-adjusted mortality rates for lung and bronchus cancer by gender are shown below as well. These graphs show:

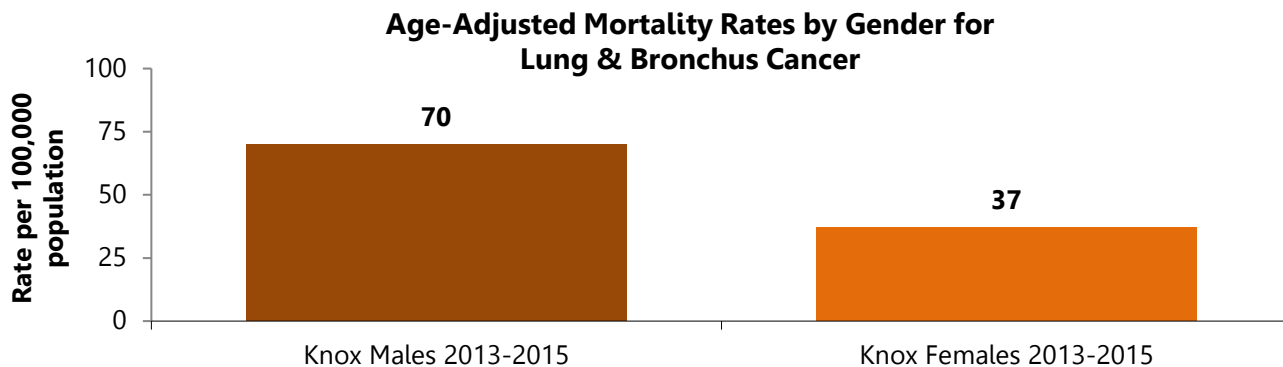
- From 2014-2016, Knox County's age-adjusted mortality rate for Chronic Lower Respiratory Disease was lower than the Ohio rate and higher than the U.S. rate. Knox County's age-adjusted rate for Chronic Lower Respiratory Disease was lower than the Healthy People 2020 target objective.
- Disparities existed by gender for lung and bronchus cancer rates. The 2014-2016 Knox County male rates were higher than the Knox County female rates.



**Healthy People 2020's target rate and the U.S. rate is for adults aged 45 years and older.
(Sources: Healthy People 2020, Ohio Public Health Data Warehouse 2014-2016, CDC Wonder 2014-2016)*

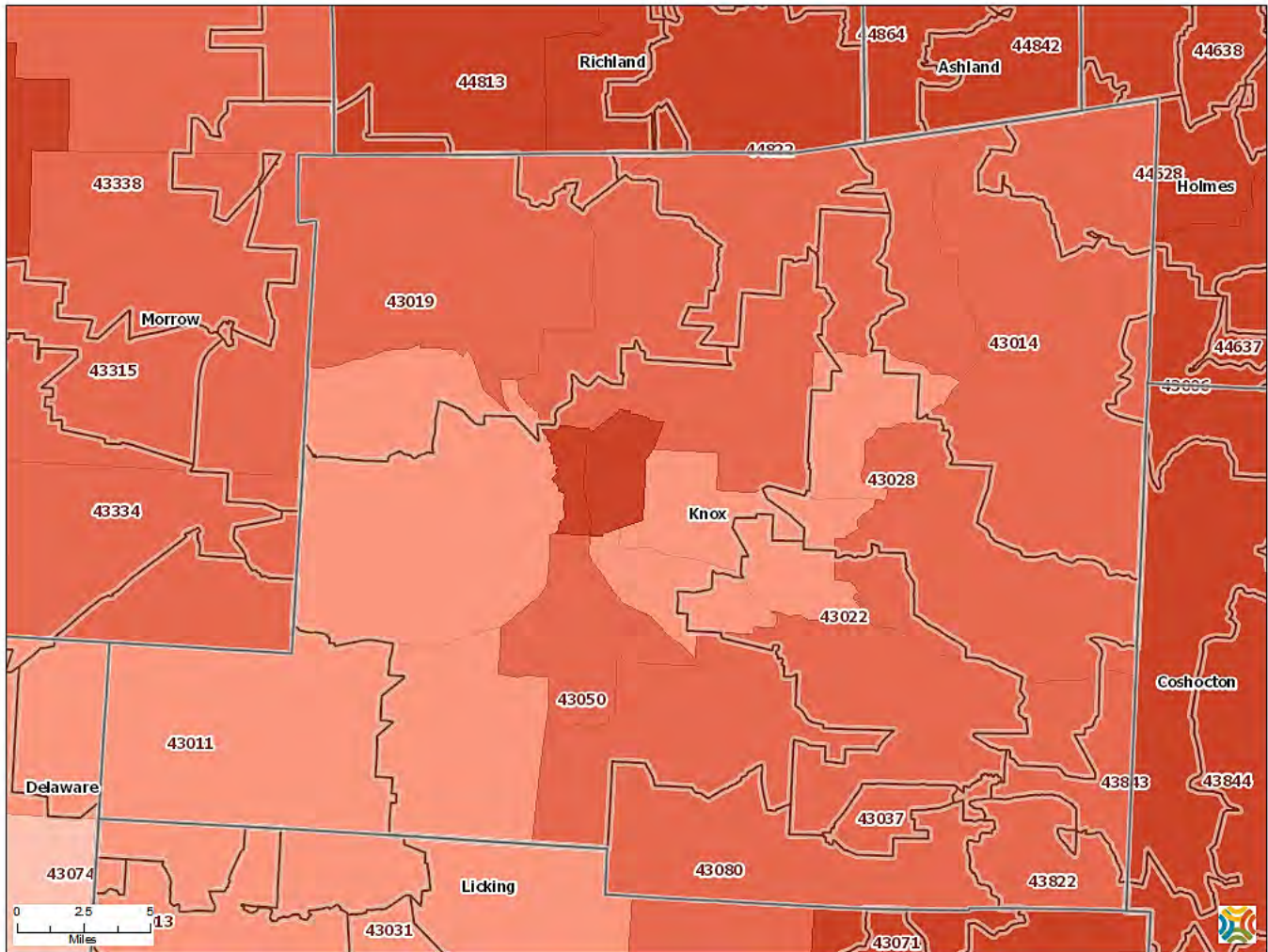


**Healthy People 2020 Target data is for lung cancer only
(Sources: Healthy People 2020, Ohio Public Health Data Warehouse 2014-2016, CDC Wonder 2014-2016)
Note: Healthy People 2020's target rate and the U.S. rate is for adults aged 45 years and older.*



(Source: Ohio Public Health Data Warehouse 2014-2016)

Cigarette Expenditures, Percent of Total Expenditures, National Rank by Tract, Nielsen 2014*



Map Legend

Cigarette Expenditures, Percent of Total Expenditures, National Rank by Tract, Nielsen 2014

- 1st Quintile (Highest Expenditures)
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile (Lowest Expenditures)
- No Data or Data Suppressed

Community Commons, 12/20/2017

(Source: Community Commons, updated 12/20/2017)

**Tobacco expenditures indicate cigarettes only; cigars and other tobacco products are not included.*

Description of indicator: To generate acceptable map output in compliance with the Nielsen terms of use agreement, percent expenditures for each tract were sorted and ranked; quintiles were assigned to each tract based on national rank and symbolized within the map.

Health Behaviors: Adult Alcohol Consumption

Key Findings

In 2018, 52% of Knox County adults had at least one alcoholic drink in the past month. One in six (17%) Knox County adults were considered binge drinkers (defined as consuming five or more drinks for males or four or more for females on one occasion) in the past month.

52% of Knox County adults had at least one alcoholic drink in the past month.

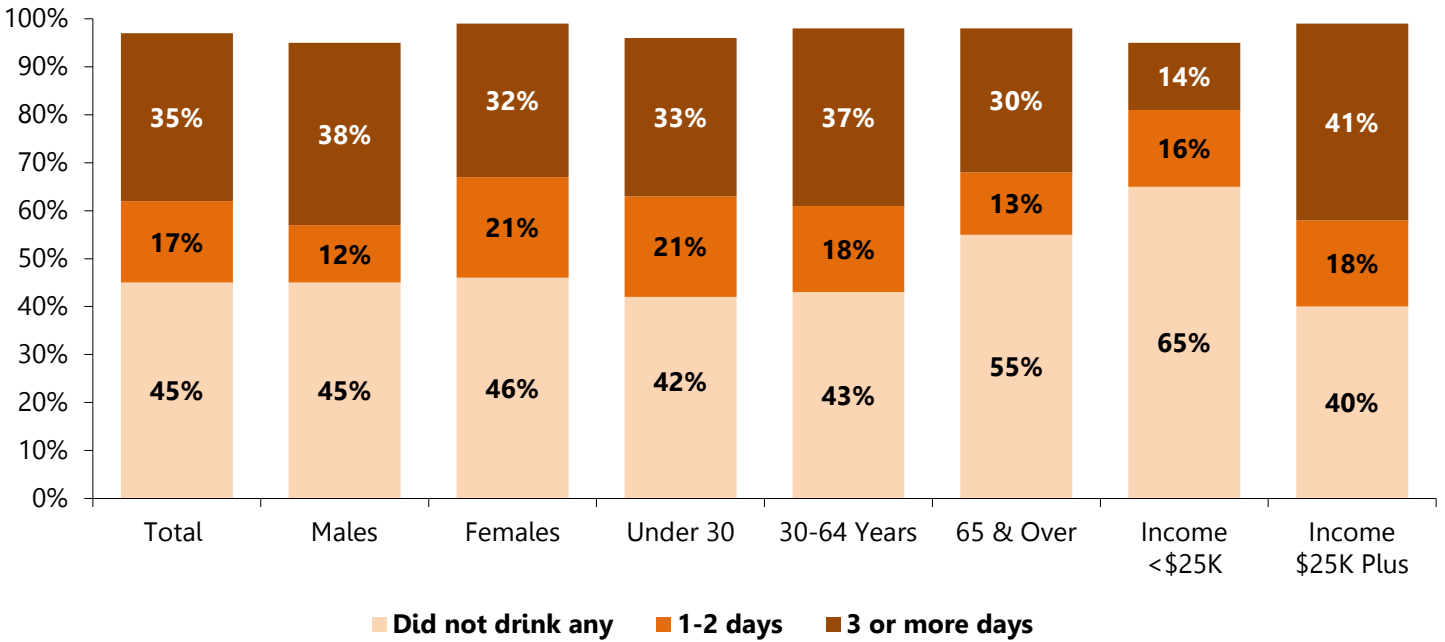
Adult Alcohol Consumption

- In 2018, 52% of Knox County adults had at least one alcoholic drink in the past month. The 2016 BRFSS reported current drinker prevalence rates of 53% for Ohio and 54% for the U.S.
- Of those who drank, Knox County adults drank 2.6 drinks on average, increasing to 3.4 drinks for those under the age of 30.
- In the past month, 16% of adults reported driving after drinking any alcoholic beverages, increasing to 28% of males.
- One in six (17%) or 7,672 Knox County adults reported they had five or more alcoholic drinks (for males) or four or more drinks (for females) on an occasion in the last month and would be considered binge drinkers. Of those who drank in the past month, 34% had at least one episode of binge drinking. The 2016 BRFSS reported binge drinking rates of 18% for Ohio and 17% for the U.S.
- Knox County adults experienced the following in the past six months: drove a vehicle or other equipment after having any alcoholic beverages (10%); drank more than they expected (6%); used prescription drugs while drinking (3%); drank more to get the same effect (2%); spent a lot of time drinking (2%); continued to drink despite problems caused by drinking (2%); tried to quit or cut down but could not (2%); gave up other activities to drink (2%); drank to ease withdrawal symptoms (1%); placed themselves or their family in harm (1%), and failed to fulfill duties at home, work, or school (1%).

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Current Drinker (drank alcohol at least once in the past month)	52%	53%	54%
Binge drinker (defined as consuming more than four [women] or five [men] alcoholic beverages on a single occasion in the past 30 days)	17%	18%	17%

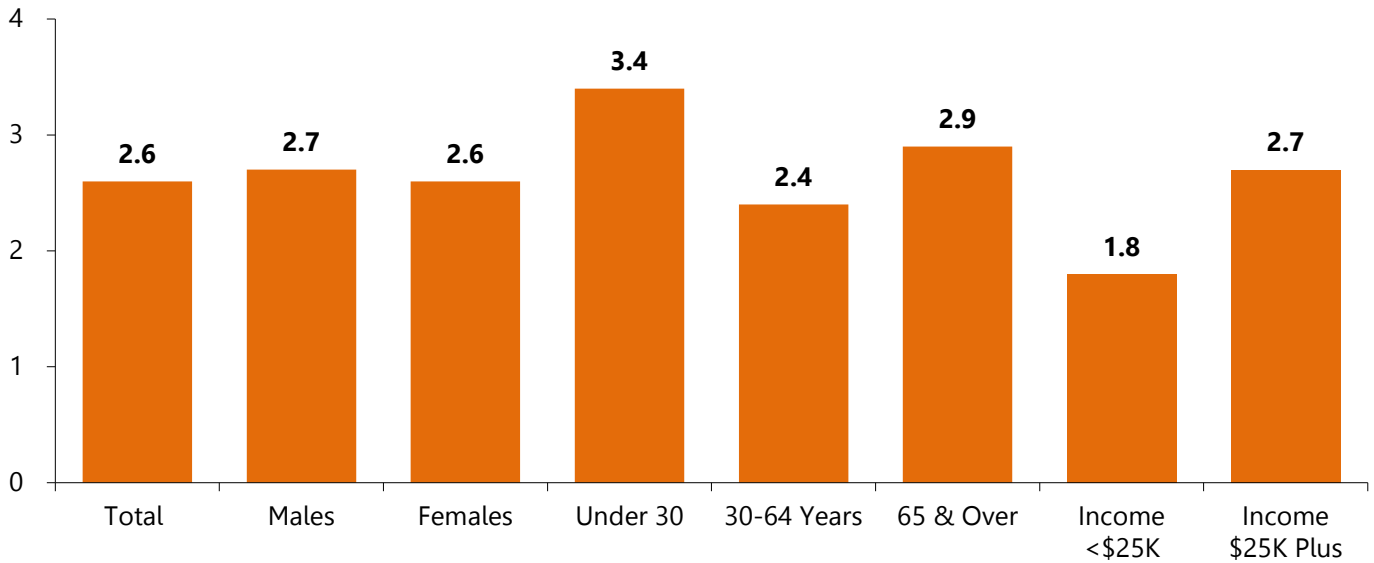
The following graphs show the percentage of Knox County adults consuming alcohol and the amount consumed on average. Examples of how to interpret the information shown on the first graph include: In Knox County, 45% of all adults, 45% of adult males, and 46% of adult females did not drink alcohol.

Average Number of Days Drinking Alcohol in the Past Month*



*Percentages may not equal 100% as some respondents answered, "don't know"
 Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

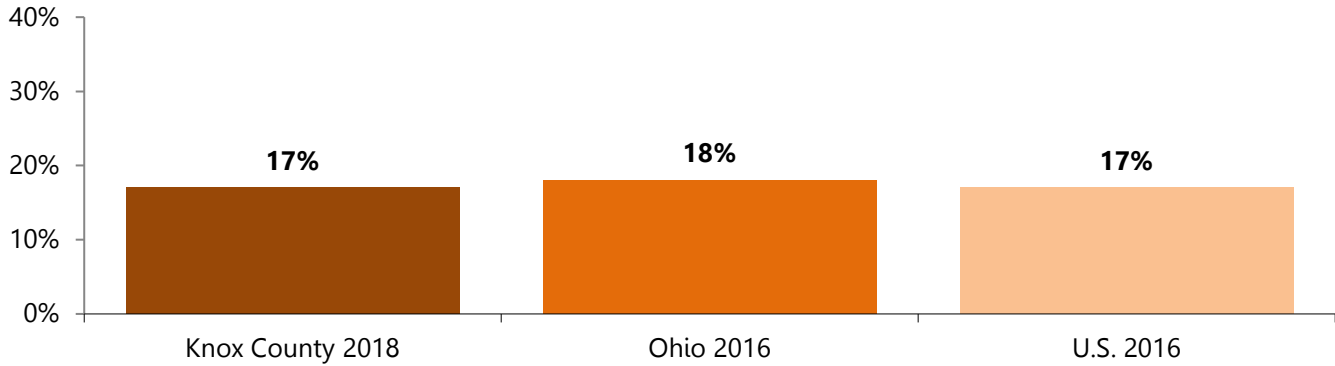
Adults Average Number of Drinks Consumed Per Drinking Occasion*



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

The following graphs show the percentage of Knox County drinkers who binge drank in the past month and a comparison of Knox County binge drinkers with Ohio and the U.S.

Adult Binge Drinkers*



*Based on all adults. Binge drinking is defined as males having five or more drinks on an occasion, females having four or more drinks on one occasion.
 (Source: 2016 BRFSS, 2018 Knox County Needs Assessment)

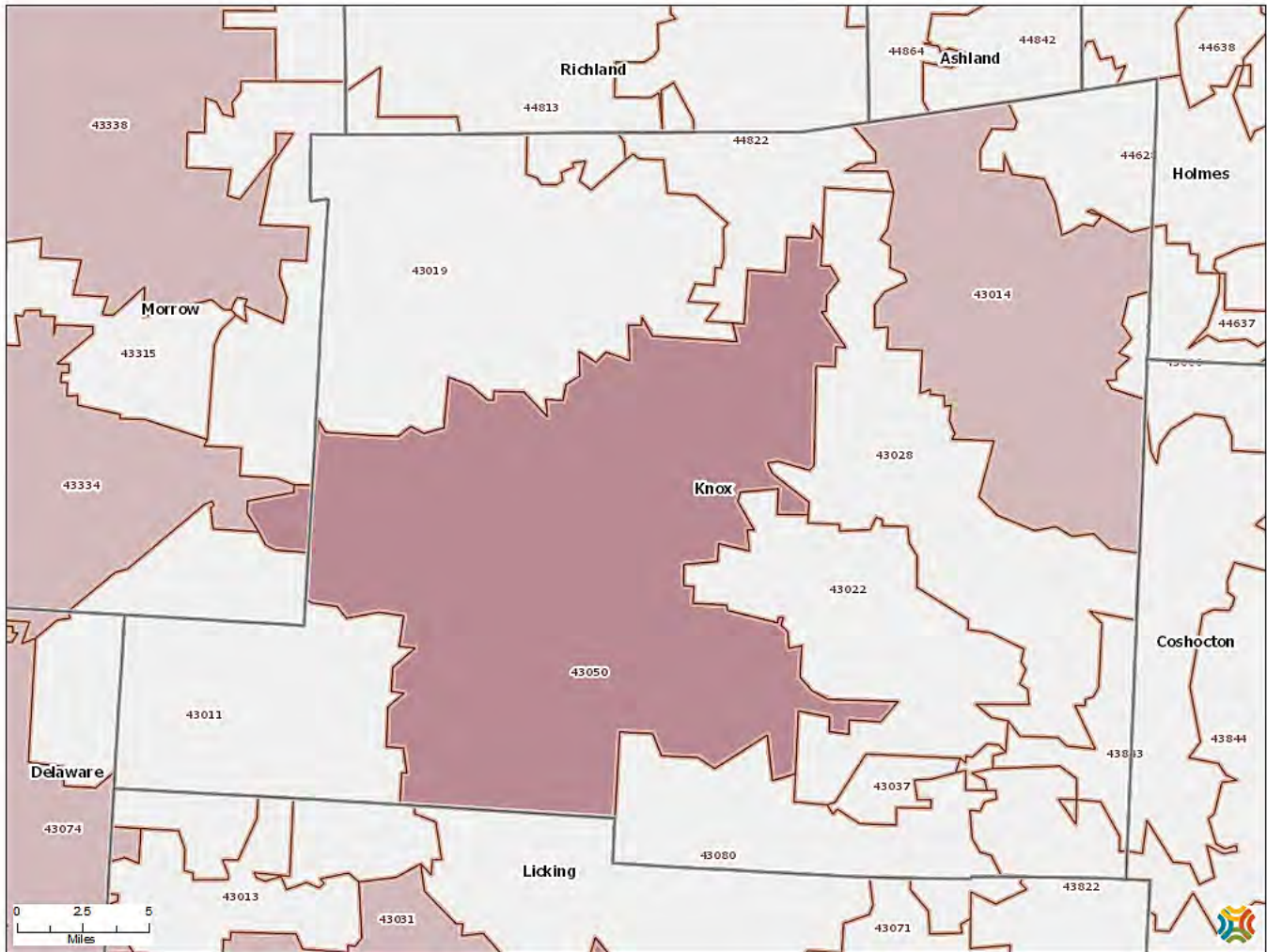
The following table shows Knox County and Ohio motor vehicle accident statistics. The table shows:

- Four percent (4%) of the total crashes in Knox County and 4% of total crashes in Ohio were alcohol-related.
- Of the total number of alcohol-related crashes (47) in Knox County, 34% were property damage only and less than 6% resulted in fatal injury.
- There were 11,928 alcohol-related crashes in Ohio in 2017. Of those crashes, 56% were property damage only, 41% resulted in non-fatal injury, and less than 2% resulted in fatal injury.

	City of Mt. Vernon 2017	Knox County 2017	Ohio 2017
Total Crashes	367	1,176	303,285
Alcohol-Related Total Crashes	7	47	11,928
Fatal Injury Crashes	0	6	1,094
Alcohol-Related Fatal Crashes	0	3	297
Alcohol Impaired Drivers in Crashes	7	47	11,666
Injury Crashes	72	291	75,435
Alcohol-Related Injuries	4	28	4,898
Property Damage Only	295	879	226,756
Alcohol-Related Property Damage Only	3	16	6,733
Deaths	0	6	1,179
Alcohol-Related Deaths	0	3	314
Total Non-Fatal Injuries	104	408	108,800

(Source: Ohio Department of Public Safety, Crash Reports, Traffic Crash Facts, Updated 4/25/2018)

Beer, Wine and Liquor Stores, Rate (Per 100,000 Pop.) by Zip Code Tabulation Area (ZCTA), Census Business Patterns (CBP), 2015



Map Legend

Beer, Wine and Liquor Stores, Total Establishments by ZCTA, CBP 2015

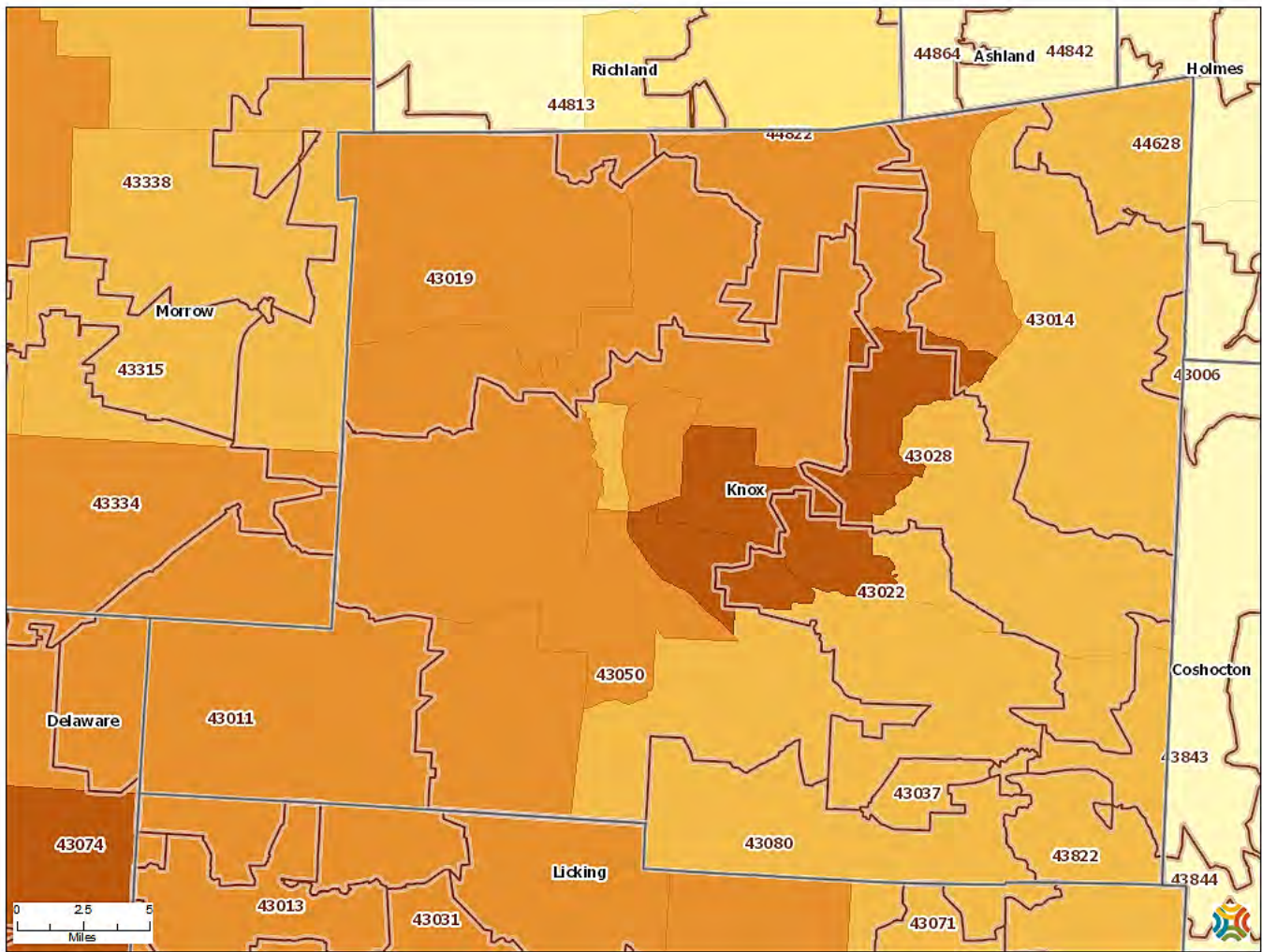
- Over 15
- 6 - 15
- 3 - 5
- 1 - 2
- No Beer, Wine, or Liquor Stores

Community Commons, 4/25/2018

(Source: U.S. Census Bureau, County Business Patterns: 2015, as compiled by Community Commons, updated 4/25/2018)

Description of indicator: Data are from the US Census Bureau's County Business Patterns data series, which classifies businesses using the North American Industry Classification System (NAICS). Map layers include county-level establishment totals and establishment rates per 100,000 population.

Alcohol Beverage Expenditures, Percent of Food-At-Home Expenditures, National Rank by Tract, Nielsen 2014



Map Legend

Alcoholic Beverage Expenditures, Percent of Food-At-Home Expenditures, National Rank by Tract, Nielsen 2014

- 1st Quintile (Highest Expenditures)
- 2nd Quintile
- 3rd Quintile
- 4th Quintile
- 5th Quintile (Lowest Expenditures)
- No Data or Data Suppressed

Community Commons, 1/24/2018

(Source: Nielsen, Nielsen SiteReports: 2014 as compiled by Community Commons)

Description of indicator: Census tract level average and aggregated total household expenditures and category expenditures were acquired from the 2011 Nielsen Consumer Buying Power (CBP) SiteReports. To generate acceptable map output in compliance with the Nielsen terms of use agreement, percent expenditures for each tract were sorted and ranked; quintiles were assigned to each tract based on national rank and symbolized within the map. Additional attributes include each tract's within-state rank and quintile.

**Alcohol expenditures included in this category are any beer, wine, and liquor purchased for consumption at home. Alcohol purchased at restaurants and bars is not included.*

Health Behaviors: Adult Drug Use

Key Findings

In 2018, 6% of Knox County adults had used recreational marijuana during the past 6 months. Seven percent (7%) of adults had used medication not prescribed for them or took more than prescribed to feel good, high, more active, and/or alert during the past 6 months.

Adult Drug Use

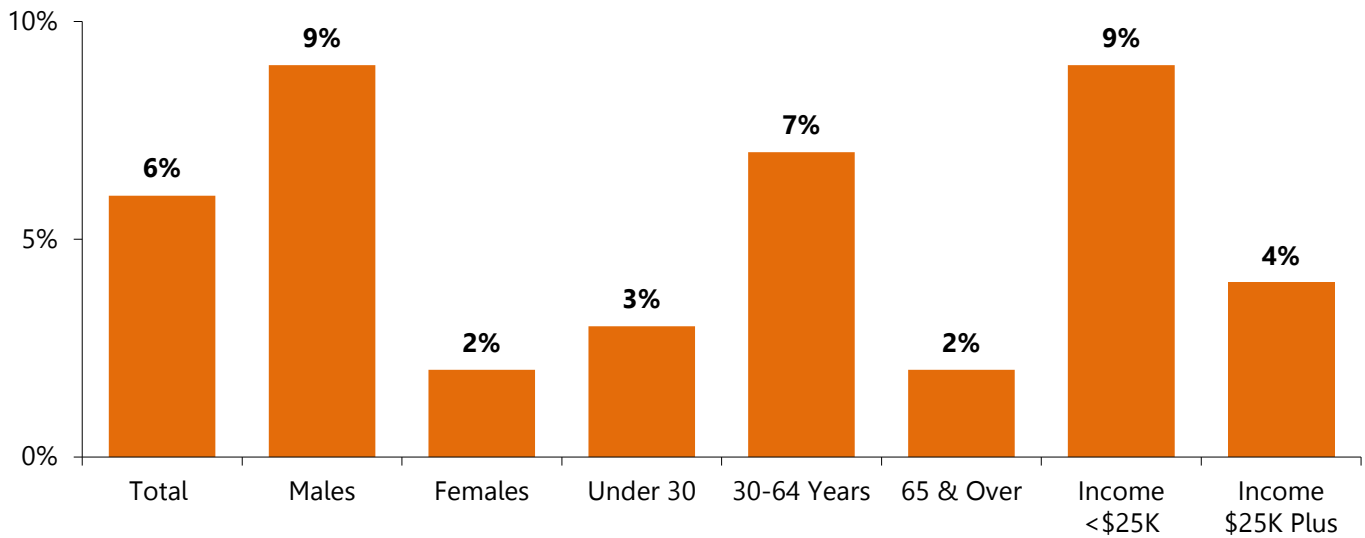
- Six percent (6%) or 2, 708 Knox County adults had used recreational marijuana in the past 6 months, increasing to 9% of males and those with incomes less than \$25,000.
- One percent (1%) of Knox County adults reported using other recreational drugs in the past 6 months such as cocaine, synthetic marijuana/K2, heroin, LSD, inhalants, Ecstasy, bath salts, methamphetamines, inappropriate use of over-the-counter medications such as cold or cough medicine, and wax or oil with THC edibles.

6% of Knox County adults had used recreational marijuana during the past 6 months.

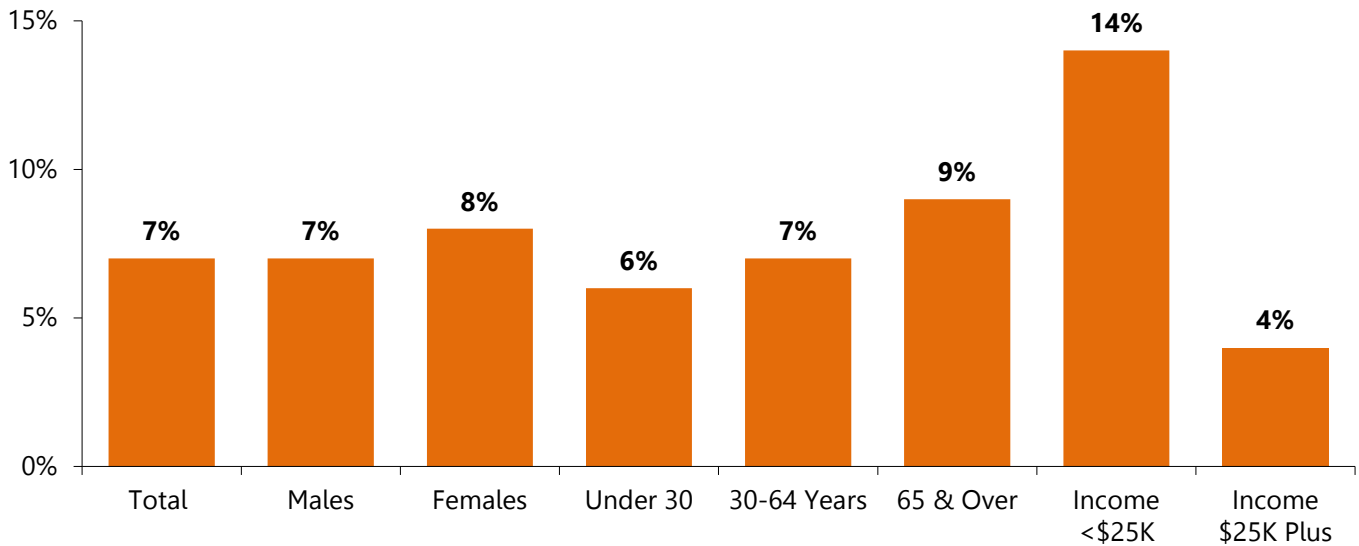
- Seven percent (7%) or 3,159 of adults had used medication not prescribed for them or they took more than prescribed to feel good, high, more active, and/or alert during the past 6 months, increasing to 14% of those with incomes less than \$25,000.
- Adults who misused medications obtained them from the following: primary care physician (79%), ER or urgent care doctor (16%), multiple doctors (8%), free from a friend or family member (5%), bought from a family member (5%), and bought from a drug dealer (5%).
- One percent (1%) of Knox County adults used a program to help with a drug problem for themselves or a loved one. Reasons for not using such a program included the following: had not thought of it (1%), did not know how to find a program (1%), fear (1%), stigma of seeking drug services (<1%), insurance did not cover it (<1%), could not afford to go (<1%), could not get to the office or clinic (<1%), no program available (<1%), transportation (<1%), and other reasons (1%). Ninety-six percent (96%) of adults indicated such a program was not needed.
- As a result of using drugs, Knox County adults indicated the following consequences for themselves or a family member: failed a drug screen (2%), regularly failed to fulfill obligations at work or home (1%), placed themselves in dangerous situations (1%), had legal problems (1%), and overdosed and required EMS/hospitalization (<1%).

The following graphs indicate adult marijuana use and medication misuse in the past 6 months. Examples of how to interpret the information include: 6% of all Knox County adults used marijuana in the past 6 months, and 9% of adults with incomes less than \$25,000 were current users.

Knox County Adult Recreational Marijuana Use in Past 6 Months*



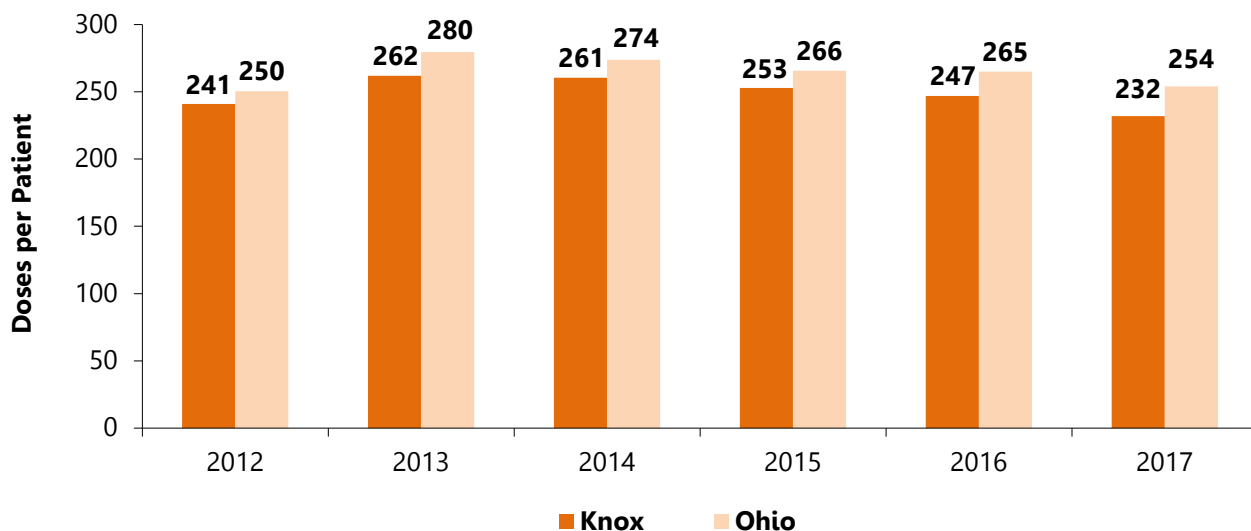
Knox County Adult Medication Misuse in Past 6 Months*



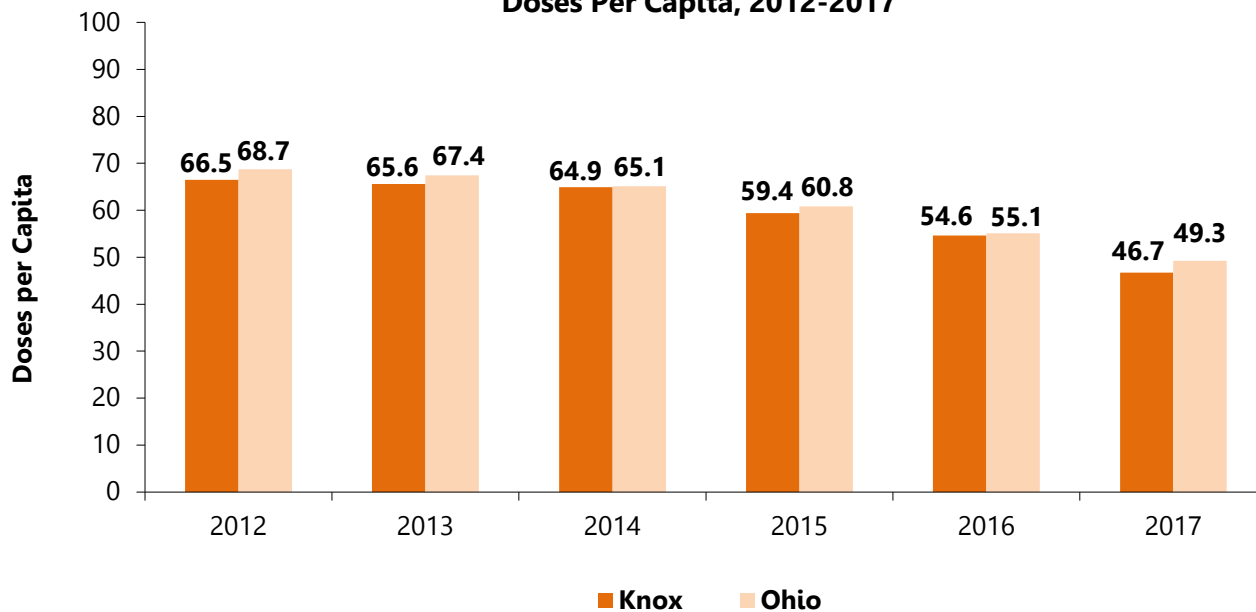
*Respondents were asked "during the past 6 months, have you used any of the following medications that were not prescribed to you, or you took more than was prescribed to feel good or high, more active or alert?"
 Note for graphs: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

The following graphs are data from the Ohio Automated Prescription Reporting System (OARRS) indicating Knox County and Ohio opiate and pain reliever doses per patient, as well as doses per capita.

Knox County and Ohio Number of Opiate and Pain Reliever Doses Per Patient, 2012-2017



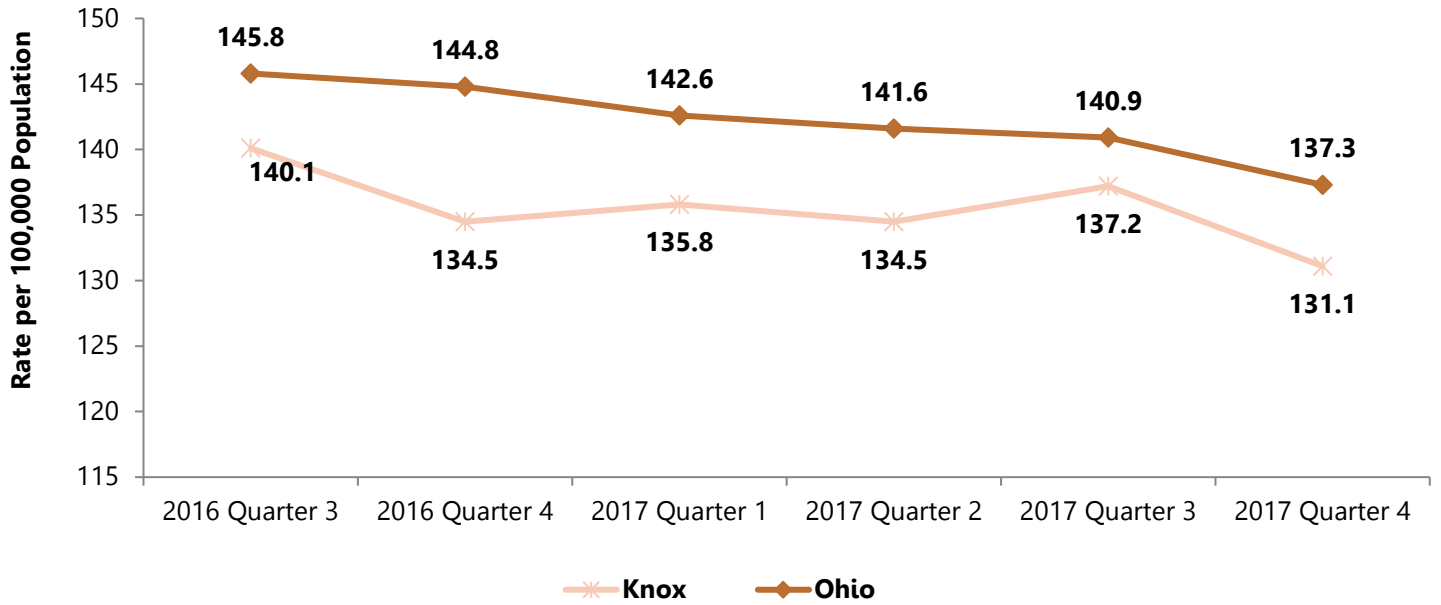
Knox County and Ohio Number of Opiate and Pain Reliever Doses Per Capita, 2012-2017



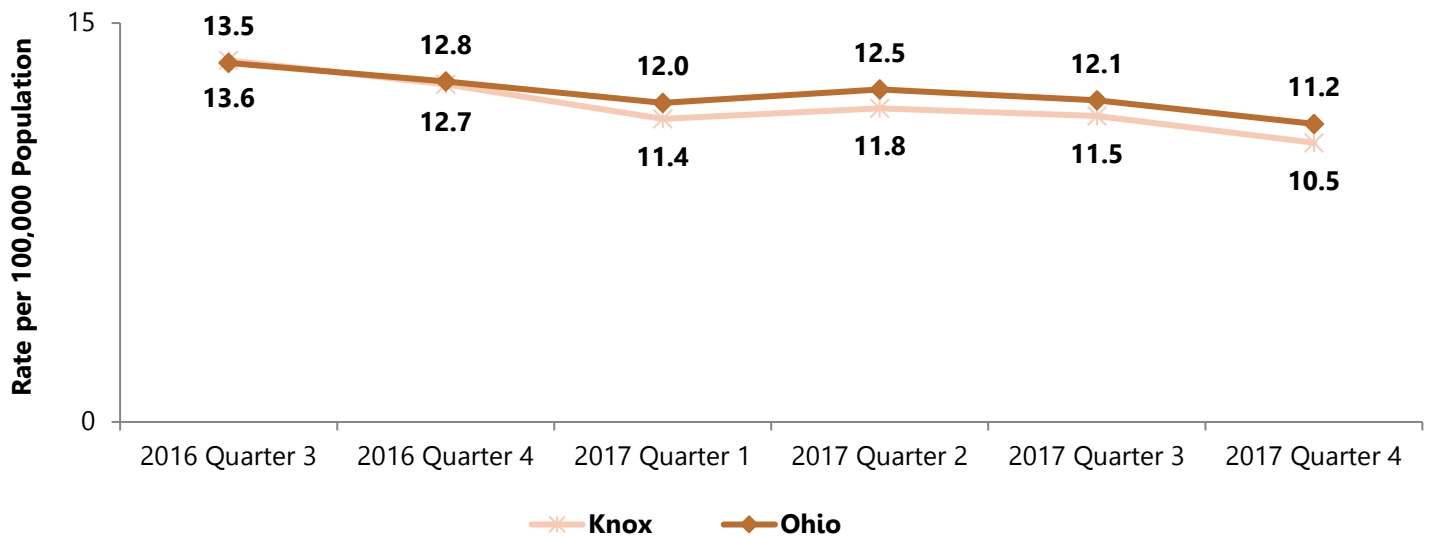
(Source for graphs: Ohio Automated Rx Reporting System, Quarterly County Data)

The following graphs show Knox County and Ohio quarterly opiate and pain reliever doses per patient and per capita, as well as annual unintentional drug overdose deaths.

Knox County and Ohio Number of Opioid Doses Per Patient, Quarterly from 2016-2017



Knox County and Ohio Number of Opioid Doses Per Capita, Quarterly from 2016-2017



(Source: Ohio's Automated Rx Reporting System, 2016-2017)

Ohio's New Limits on Prescription Opiates

- The opioid epidemic is undeniably a major public health issue that Ohio has been addressing since 2012. Furthering steps to save lives, Ohio has updated its policies in limiting opiate prescriptions, especially acute pain. With the highlights of Ohio's new opiate prescribing limits below, Ohio hopes to reduce opiate doses by 109 million per year:
 - No more than seven days of opiates can be prescribed for adults; no more than five days of opiates can be prescribed for minors.
 - The total morphine equivalent dose (MED) of a prescription for acute pain cannot exceed an average of 30 MED per day.
 - Health care providers can prescribe opiates in excess of the new limits only if they provide a specific reason in the patient's medical record. Unless such a reason is given, a health care provider is prohibited from prescribing opiates that exceed Ohio's limits.
 - Prescribers will be required to include a diagnosis or procedure code on every controlled substance prescription, which will be entered into Ohio's prescription monitoring program, OARRS.
 - The new limits do not apply to opioids prescribed for cancer, palliative care, end-of-life/hospice care or medication-assisted treatment for addiction.
 - The new limits will be enacted through rules passed by the State Medical Board, Board of Pharmacy, Dental Board and Board of Nursing.
- Since 2012, Ohio has reduced opiate prescriptions by 20% yet, more needs to be done to reduce the possibility of opiate abuse to those who are prescribed.

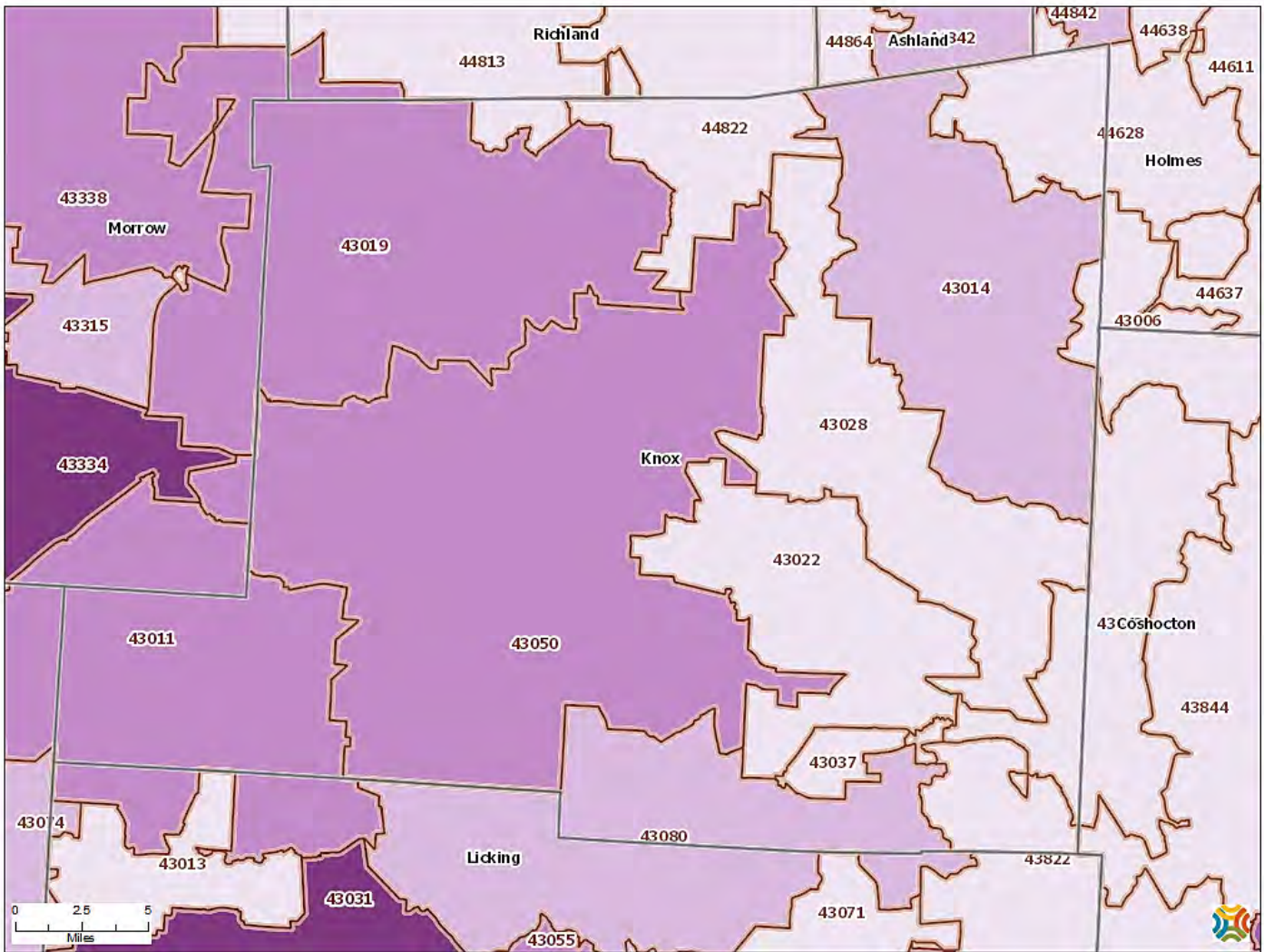
(Source: Ohio Mental Health and Addiction Services; New Limits on Prescription Opiates Will Save Lives and Fight Addiction, updated March 31, 2017)

Ohio Automated Rx Reporting System (OARRS)

- OARRS has been collecting information from all Ohio-licensed pharmacies and Ohio personal licensed prescribers regarding outpatient prescriptions for controlled substance since 2006.
 - All data reported is updated every 24 hours and is maintained in a secure database
- OARRS aims to be a reliable tool in addressing prescription drug diversion and abuse.
- With many features such as a patient care tool, epidemic early warning system, drug diversion and insurance fraud investigation tool, OARRS is the only statewide electronic database that helps prescribers and pharmacists avoid potential life-threatening drug interactions.
 - OARRS also works in limiting patients who "doctor shop" which refers to individuals fraudulently obtaining prescriptions from multiple health care providers for the same or multiple prescription for abuse or illegal distribution.
- Additionally, OARRS is also used for investigating and identifying health care professionals with continual inappropriate prescribing and dispensing to patients, and then aids in law enforcement cases against such acts.

(Source: Ohio Automated RX Reporting System; What is OARRS?, updated August 15, 2017)

Opioid Drug Claims, Percentage of Total Drug Claims by Zip Code Tabulation Area, Centers for Medicaid and Medicare (CMS), 2013



Map Legend

Opioid Drug Claims, Percentage of Total Prescription Drug Claims by ZCTA, CMS 2013

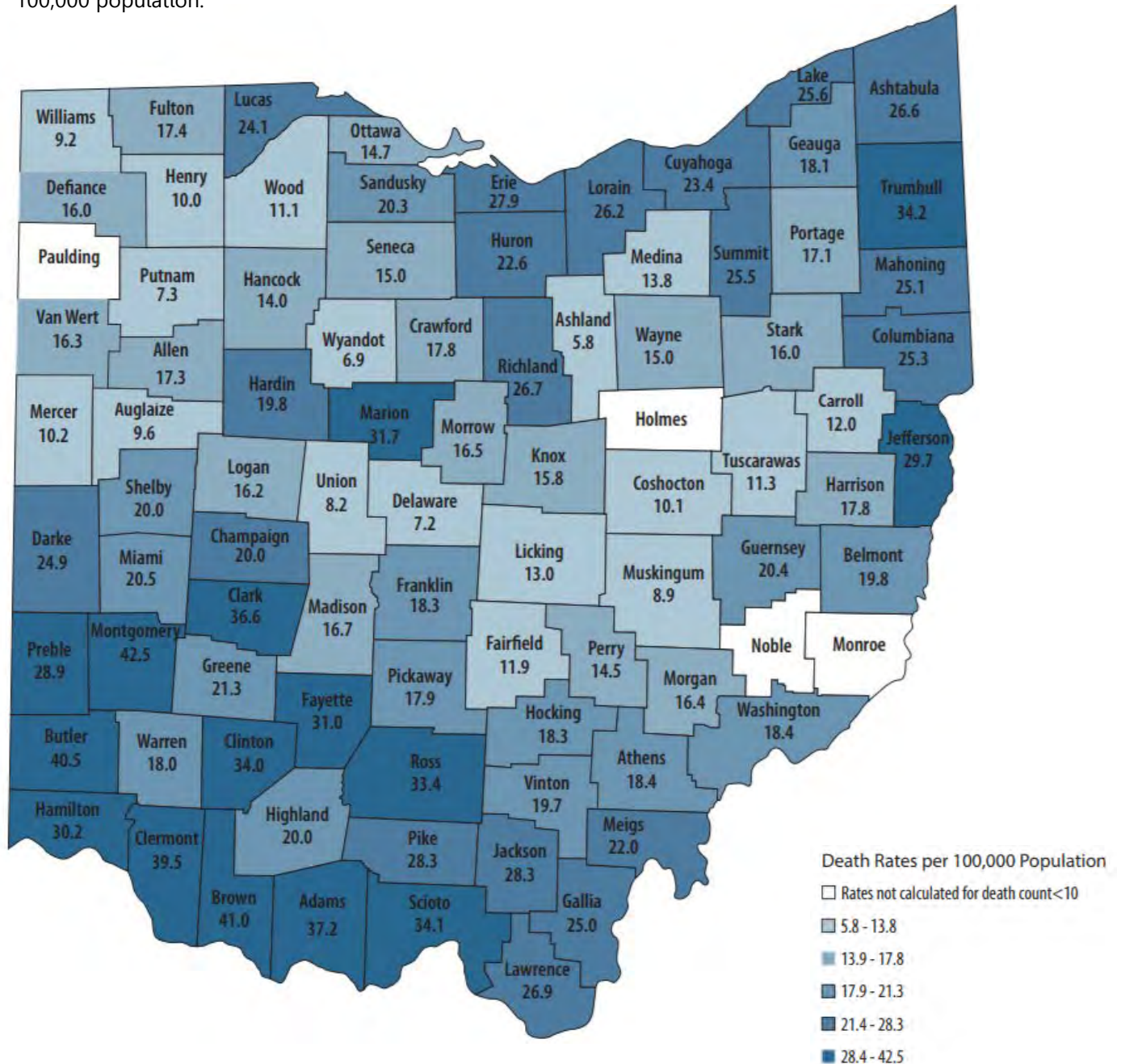
- Over 8.0%
- 6.1 - 8.0%
- 4.1 - 6.0%
- Under 4.1%
- No Claims or No Data

Community Commons, 1/3/2018

(Source: Centers for Medicare and Medicaid Services: 2013, as compiled by Community Commons)

Average Age-Adjusted Unintentional Drug Overdose Death Rate Per 100,000 Population, by County, 2011-2016

- The Ohio age-adjusted unintentional drug overdose death rate for 2011-2016 was 23.1 deaths per 100,000 population.
- Knox's County's age-adjusted unintentional drug overdose death rate for 2011-2016 was 15.8 deaths per 100,000 population.



(Sources: "2016 Ohio Drug Overdoses Data: General Findings," Ohio Department of Health; Ohio Department of Health, Bureau of Vital Statistics; analysis conducted by ODH Violence and Injury Prevention Program; U.S. Census Bureau (Vintage 2016 population estimates))

Note: Includes Ohio residents who died due to unintentional drug poisoning (underlying cause of death ICD-10 codes X40-X44). Rate suppressed if < 10 total deaths for 2011-2016.

Health Behaviors: Adult Sexual Behavior

Key Findings

In 2018, 73% of Knox County adults had sexual intercourse. Four percent (4%) of adults had more than one partner. The CDC estimates that youth ages 15-24 make up just over one quarter of the sexually active population but account for half of the 20 million new sexually transmitted infections that occur in the United States each year (Source: CDC, STDs in Adolescents and Young Adults, 2017 STD Surveillance).

Adult Sexual Behavior

- In 2018, 73% of Knox County adults had sexual intercourse.
- Four percent (4%) or 1,805 adults reported they had intercourse with more than one partner in the past year, increasing to 9% of those under the age of 30.
- Knox County adults used the following methods of birth control: vasectomy (18%), tubes tied (17%), they or their partner were too old (13%), condoms (10%), birth control pill (9%), hysterectomy (8%), withdrawal (8%), infertility (5%), abstinence (4%), ovaries or testicles removed (3%), shots (2%), IUD (2%), rhythm method (2%), and contraceptive implants (2%).
- Fourteen percent (14%) of Knox County adults did not use any method of birth control.

Contraceptive Use in the United States

- Sixteen percent (16%) of women aged 15-44 are currently using birth control pills.
- Seven percent (7%) of women aged 15-44 are currently using long-acting reversible contraception such as an Intrauterine device or contraceptive implant.
- Sixteen percent (16%) of women aged 15-44 are currently using female sterilization.
- Five percent (5%) of women aged 15-44 are currently using male sterilization.

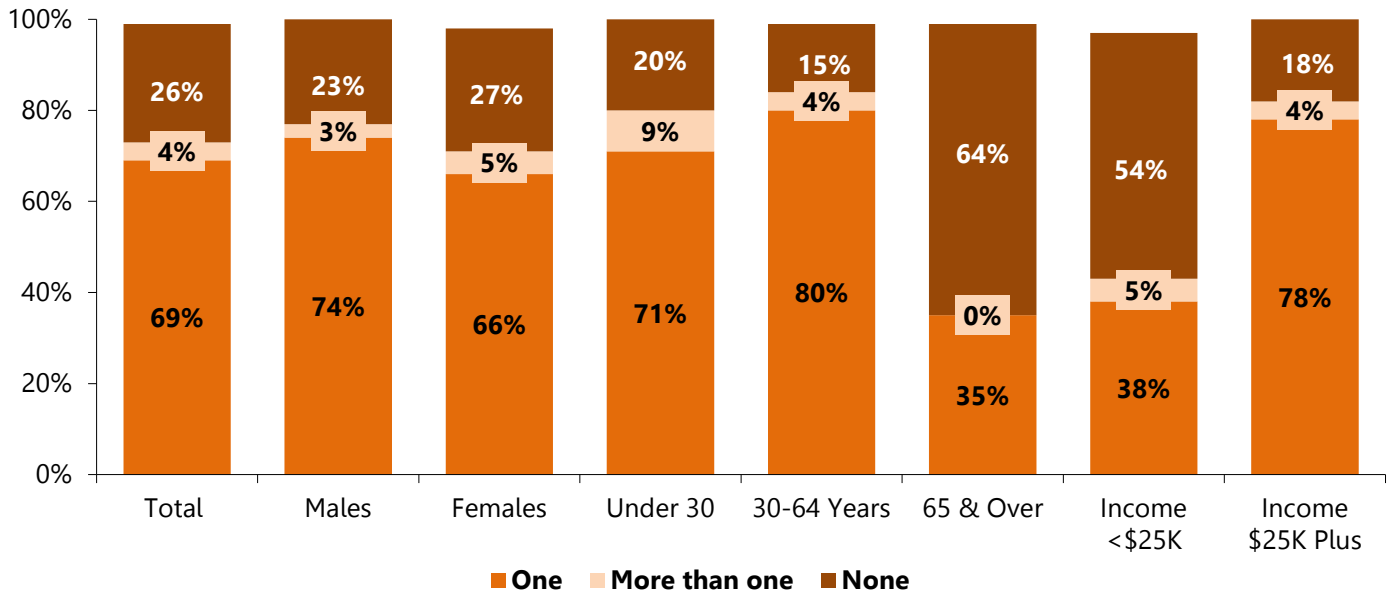
(Source: CDC, National Center for Health Statistics, Contraceptive Use, Last Updated July 15, 2016)

4% of adults reported they had intercourse with more than one partner in the past year.

- The following situations applied to Knox County adults in the past year: had sex without a condom (35%), had anal sex without a condom (6%), tested for an STD (5%), tested positive for HPV (2%), had sexual activity with someone of the same gender (1%), engaged in sexual activity following alcohol or drug use they would not have done if sober (1%), treated for an STD (1%), injected any drug not prescribed (1%), had sex with someone they met on social media (1%), were forced to have sex (1%), had four or more sexual partners (<1%), had sex with someone they did not know (<1%), and tested positive for Hepatitis C (<1%).

The following graph shows the number of sexual partners Knox County adults had in the past year. Examples of how to interpret the information in the graph include: 69% of all Knox County adults had one sexual partner in the past 12 months, 4% had more than one, and 9% of those under the age of 30 had more than one partner.

Number of Sexual Partners in the Past Year*



*Percentages may not equal 100% as some respondents answered, "don't know"

**Respondents were asked: "During the past 12 months, with how many different people have you had sexual intercourse?"

Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

Understanding Sexual Violence

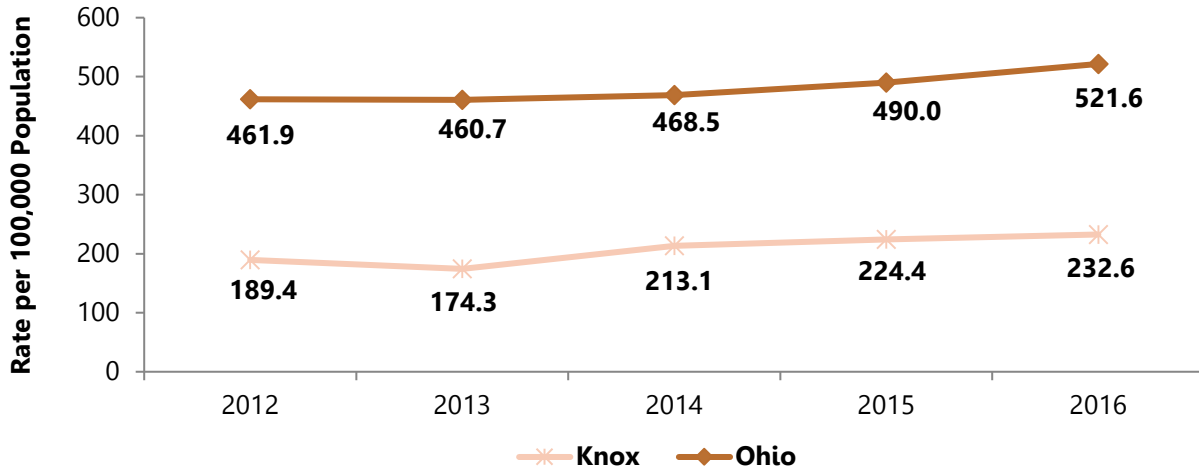
- Sexual violence refers to any sexual activity where consent is not obtained or freely given.
- Anyone can experience or perpetrate sexual violence.
 - Most victims of sexual violence are female
 - Perpetrators are usually someone known to the victim
- There are many types of sexual violence including unwanted touching, unwanted sexual penetration, sexual harassment, and threats.
- Sexual violence is a significant problem in the United States, even though many cases are not reported.
 - 7.3% of high school students reported having been forced to have sex
 - An estimated 20-25% of college women in the U.S. were victims of attempted or completed rape during their college career
 - About 1 in 5 women and 1 in 59 men in the U.S. have been raped at some time in their lives
- Sexual violence can negatively impact health in many ways including chronic pain and STD's and is also linked to negative health behaviors including tobacco, drug, and alcohol abuse.
- The ultimate goal is to stop sexual violence before it begins. Many activities are needed to accomplish this goal including:
 - Engaging middle and high school students in skill-building activities that address healthy sexuality
 - Helping parents identify and address violent attitudes and model healthy relationships
 - Engaging youth and adults as positive bystanders to speak up against sexism and violence supportive behaviors and intervene when they see someone at risk
 - Create and enforce policies at work, school, and other places that address sexual harassment
 - Implement evidence-based prevention strategies in schools and communities

(Source: CDC, Sexual Violence, last updated April 4, 2017)

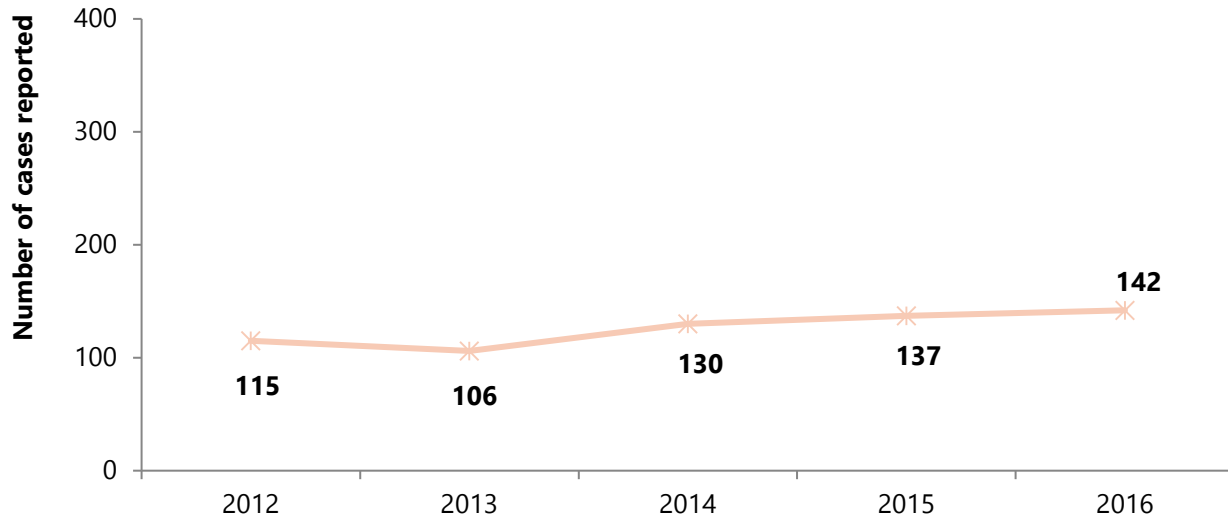
The following graphs show Knox County chlamydia disease rates per 100,000 population and the number of chlamydia disease cases. The graphs show:

- Knox County chlamydia rates increased from 2012 to 2016. However, Knox County rates still remained below the Ohio rates.
- The number of chlamydia cases in Knox County increased from 2015-2016.

Chlamydia Annualized Disease Rates for Knox County and Ohio



Annualized Count of Chlamydia Cases for Knox County

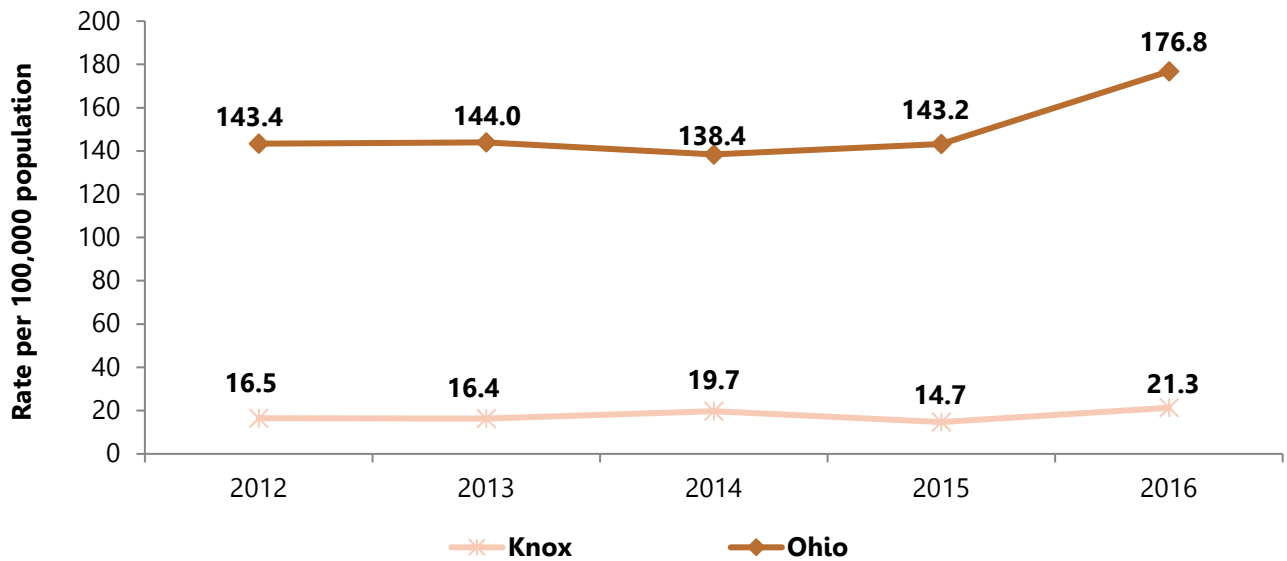


(Source for graphs: ODH, STD Surveillance, data reported through 5/7/17)

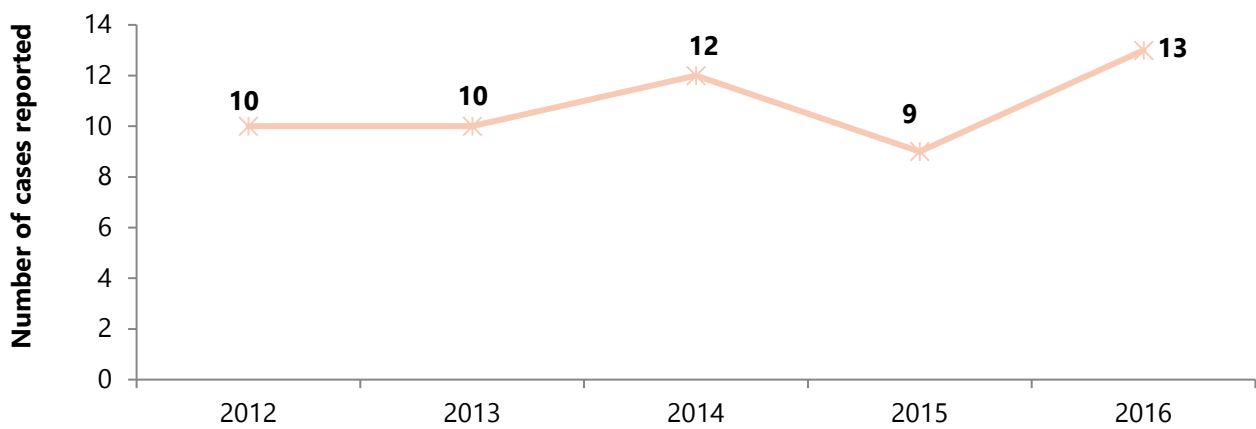
The following graphs show Knox County gonorrhea disease rates per 100,000 population and the number of gonorrhea disease cases. The graphs show:

- The Knox County gonorrhea rate increased from 2015-2016.
- The Ohio gonorrhea rate stayed about the same from 2012-2015, but increased in 2016.
- The Healthy People 2020 Objective for gonorrhea is 257 new female and 198 new male cases per 100,000 population.

Gonorrhea Annualized Disease Rates for Knox County and Ohio



Annualized Count of Gonorrhea Cases for Knox County

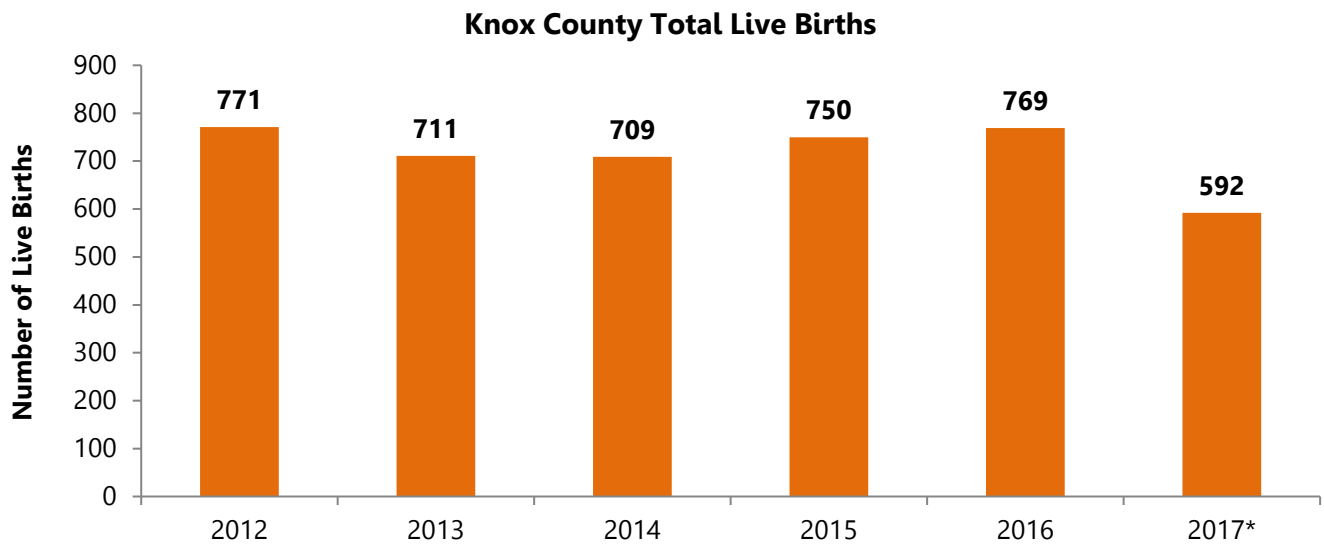


(Source for graphs: ODH, STD Surveillance, data reported through 5/7/17)

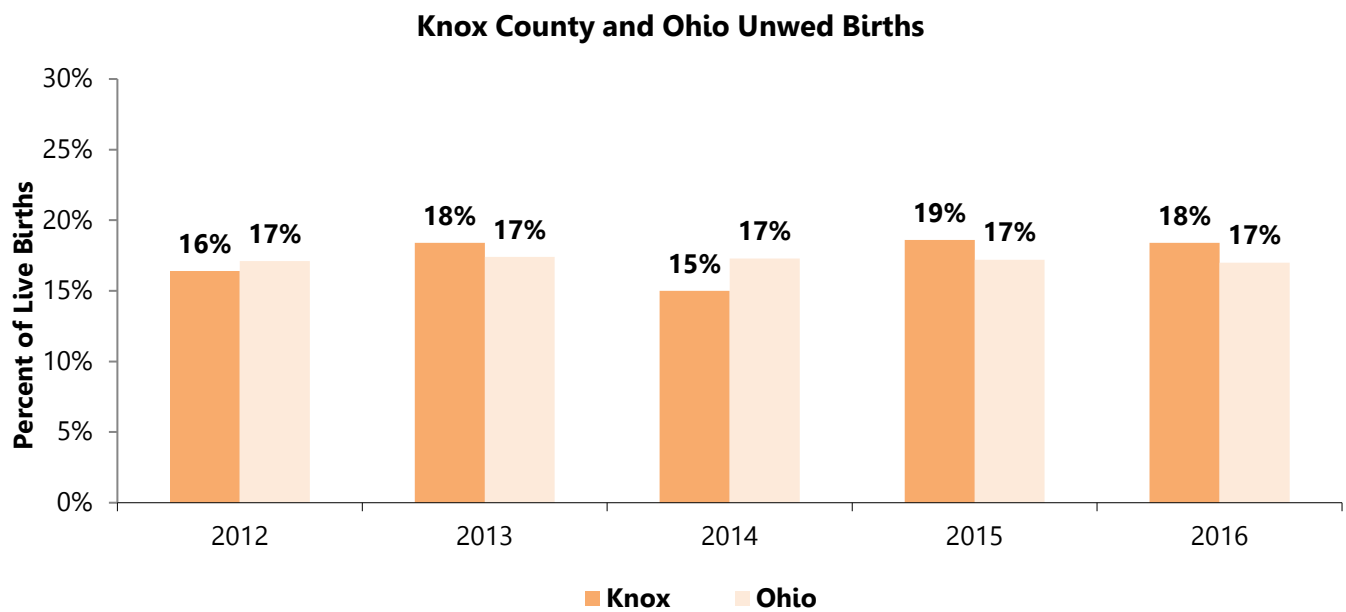
Pregnancy Outcomes

Please note that the pregnancy outcomes data includes all births to adults and adolescents.

- From 2012-2017, there was an average of 717 live births per year in Knox County.



**Data is incomplete and subject to change*



(Source for graphs: ODH Public Health Data Warehouse Updated 5-21-17)

Health Behaviors: Adult Mental Health

Key Findings

In 2018, 3% of Knox County adults considered attempting suicide. Nine percent (9%) of Knox County adults had a period of two or more weeks when they felt so sad or hopeless nearly every day that they stopped doing usual activities.

Adult Mental Health

- In the past year, 9% (approximately 4,062) of Knox County adults had a period of two or more weeks when they felt so sad or hopeless nearly every day that they stopped doing usual activities, increasing to 20% those under the age of 30.
- Those adults who felt sad, blue, or depressed almost every day for two weeks or more in a row in the past year experienced the following: felt fatigued, no energy (44%); had trouble sleeping or slept too much (39%); woke up before they wanted (27%); had trouble thinking or concentrating (23%); felt worthless or hopeless (20%); felt extremely restless or slowed down (19%); lost interest in most things (19%); had a weight/appetite change (14%); and thought about death or suicide (8%).
- Three percent (3%) or 1,354 Knox County adults considered attempting suicide in the past year.
- Less than one percent (<1%) of adults reported attempting suicide in the past year.
- Knox County adults reported they or a family member were diagnosed with, or treated for, the following mental health issues: depression (23%), anxiety or emotional problems (22%), an anxiety disorder (14%), attention deficit disorder (ADD/ADHD) (8%), bipolar (8%), post-traumatic stress disorder (PTSD) (7%), alcohol and illicit drug abuse (6%), other trauma (3%), developmental disability (3%), autism spectrum (2%), eating disorder (2%), life-adjustment disorder/issue (2%), psychotic disorder (1%), problem gambling (<1%), and some other mental health disorder (4%). Nineteen percent (19%) indicated they or a family member had taken medication for one or more mental health issues.
- Knox County adults indicated the following caused them anxiety, stress or depression: financial stress (35%), job stress (32%), death of close family member or friend (19%), poverty/no money (17%), other stress at home (15%), marital/dating relationships (14%), sick family member (12%), fighting at home (11%), caring for a parent (9%), family member with a mental illness (8%), unemployment (5%), divorce/separation (4%), not having a place to live (2%), not having enough to eat (2%), not feeling safe in the community (2%), not feeling safe at home (1%), sexual orientation/gender identity (1%), and other causes (11%).
- Knox County adults dealt with stress in the following ways: talked to someone they trust (44%), prayer/meditation (39%), ate more or less than normal (33%), exercised (30%), listened to music (29%), slept (28%), worked on a hobby (25%), worked (23%), drank alcohol (11%), smoked tobacco (7%), took it out on others (6%), used prescription drugs as prescribed (5%), called a professional (2%), used illegal drugs (2%), misused prescription drugs as prescribed (1%), self-harm (<1%), and other ways (13%).
- Knox County adults received the social and emotional support they needed from the following: family (66%), friends (54%), God/prayer (42%), church (31%), neighbors (4%), a professional (4%), Internet (3%), community (2%), online support group (1%), text crisis line (1%), self-help group (<1%), and other (2%).

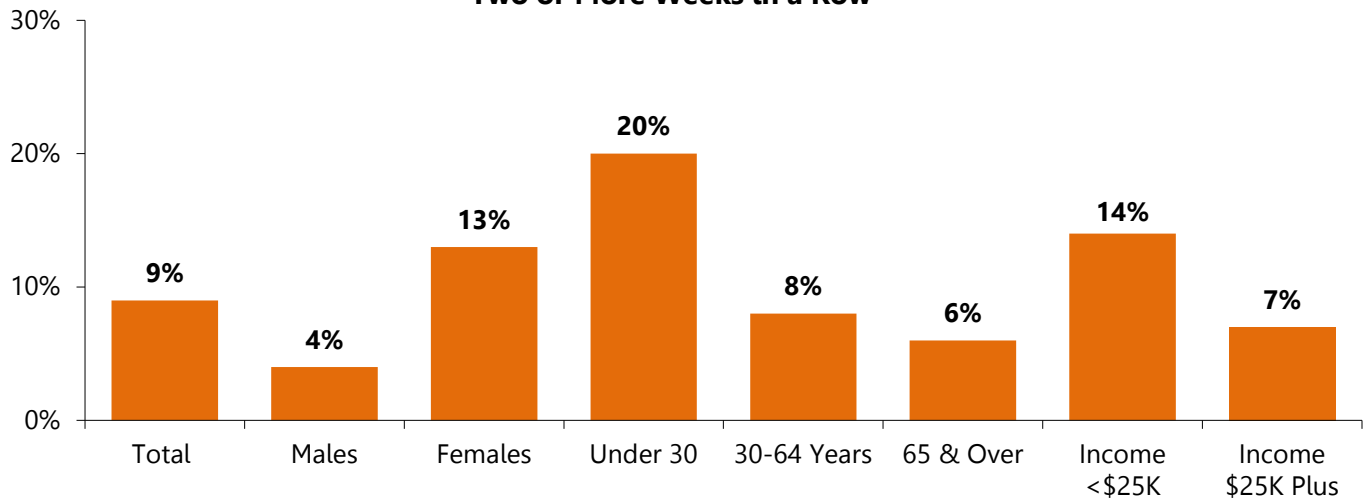
Mental Health in the U.S.

- In 2016, 3.6% of adults aged 18 and over experienced serious psychological distress in the past 30 days.
- There were 65.9 million visits to physicians' offices with mental disorders as the primary diagnosis in 2014.
- There were 5.0 million visits to emergency departments with mental disorders as the primary diagnosis in 2014.
- In 2014, there were 42,773 suicide deaths.

(Source: CDC, National Center for Health Statistics, Mental Health, Depression, last updated 5/3/2017)

The following graph shows Knox County adults who felt sad or hopeless for two or more weeks in a row in the past year. Examples of how to interpret the information in the graph include: 9% of all Knox County adults felt sad or hopeless for two or more weeks in a row, including 4% of males and 13% of females.

Knox County Adults Feeling Sad or Hopeless for Two or More Weeks in a Row



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey

National Suicide Statistics

- 44,965 people in the U.S. died from suicide, and 1,124,125 people attempted suicide in 2016.
- An average of one person killed themselves every 11.7 minutes
- Suicide is the 10th ranking cause of death in the U.S.
- For every female death by suicide, there are 3.4 male deaths.
- The leading suicide methods included:
 - Firearm suicides (51.0%)
 - Suffocation/Hanging (25.9%)
 - Poisoning (14.9%)
 - Cutting/Piercing (1.9%)
 - Drowning (1.1%)

(Sources: American Association of Suicidology, Facts & Statistics, 2016 retrieved on January 2018)

Chronic Disease: Cardiovascular Health

Key Findings

In 2018, 7% of Knox County adults had survived a heart attack and 2% had survived a stroke at some time in their lives. More than one-third (37%) of Knox County adults were obese, 35% had high blood pressure, 34% had high blood cholesterol, and 15% were smokers, four known risk factors for heart disease and stroke.

Heart Disease and Stroke

- In 2018, 7% of Knox County adults reported they had survived a heart attack or myocardial infarction, increasing to 17% of those over the age of 65.
- Five percent (5%) of Ohio and 4% of U.S. adults reported they had a heart attack or myocardial infarction in 2016 (Source: 2016 BRFSS).
- Two percent (2%) of Knox County adults reported they had survived a stroke, increasing to 6% of those over the age of 65 and those with incomes less than \$25,000.
- Four percent (4%) of Ohio and 3% of U.S. adults reported having had a stroke in 2016 (Source: 2016 BRFSS).
- Four percent (4%) of adults reported they had angina or coronary heart disease, increasing to 13% of those over the age of 65.
- Five percent (5%) of Ohio and U.S. adults reported having had angina or coronary heart disease in 2016 (Source: 2016 BRFSS).
- Four percent (4%) of adults reported they had congestive heart failure, increasing to 7% of those over the age of 65 and 9% of those with incomes less than \$25,000.

High Blood Pressure (Hypertension)

- More than one-third (35%) or 15,796 adults had been diagnosed with high blood pressure. The 2015 BRFSS reports hypertension prevalence rates of 34% for Ohio and 31% for the U.S.
- Eighty-five percent (85%) of adults had their blood pressure checked within the past year.
- Knox County adults diagnosed with high blood pressure were more likely to have:
 - Been ages 65 years or older (65%)
 - Rated their overall health as fair or poor (60%)
 - Been classified as obese by Body Mass Index-BMI (42%)

Knox County Leading Causes of Death 2014-2016

Total Deaths: 1,853

- Heart Disease (24% of all deaths)
- Cancer (21%)
- Chronic Lower Respiratory Diseases (6%)
- Alzheimer's Disease (5%)
- Stroke (5%)

(Source: Ohio Public Health Data Warehouse, 2014-2016)

Ohio Leading Causes of Death 2014-2016

Total Deaths: 352,105

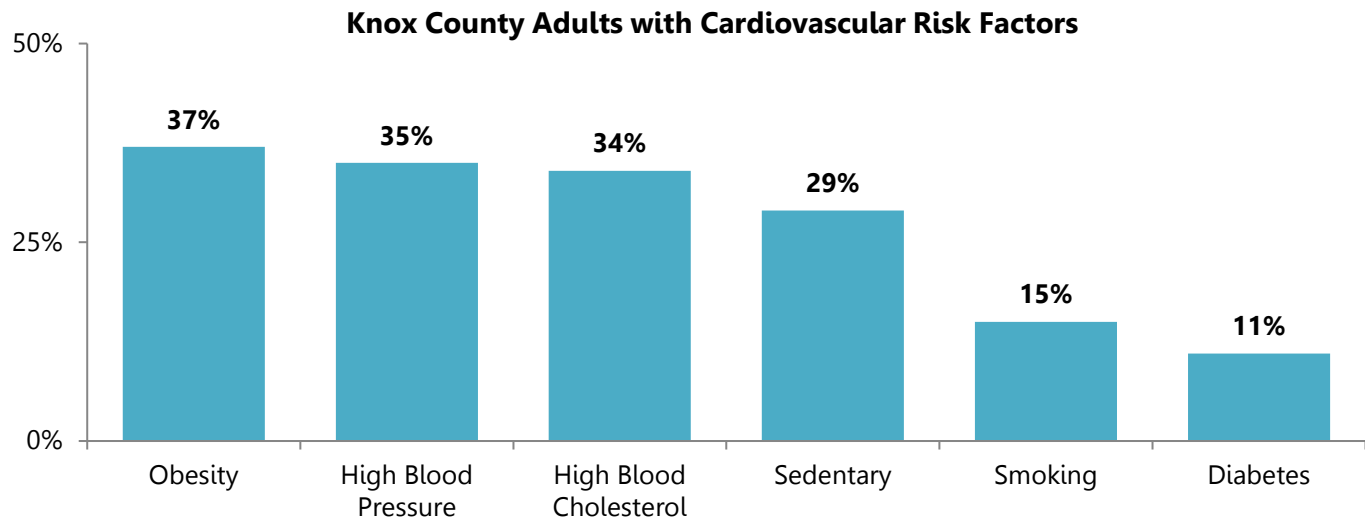
- Heart Disease (23% of all deaths)
- Cancers (22%)
- Chronic Lower Respiratory Diseases (6%)
- Accidents, Unintentional Injuries (6%)
- Stroke (5%)

(Source: Ohio Public Health Data Warehouse, 2014-2016)

High Blood Cholesterol

- More than one-third (34%) or 15,344 adults had been diagnosed with high blood cholesterol. The 2015 BRFSS reported that 37% of Ohio and 36% of U.S. adults have been told they have high blood cholesterol.
- More than three-fourths (77%) of adults had their blood cholesterol checked within the past 5 years. The 2015 BRFSS reported 78% of Ohio and U.S. adults had their blood cholesterol checked within the past 5 years.
- Knox County adults with high blood cholesterol were more likely to have:
 - Been ages 65 years or older (65%)
 - Rated their overall health as fair or poor (58%)
 - Been classified as obese by Body Mass Index-BMI (39%)

The following graph demonstrates the percentage of Knox County adults who had major risk factors for developing cardiovascular disease (CVD).



(Source: 2018 Knox County Health Assessment)

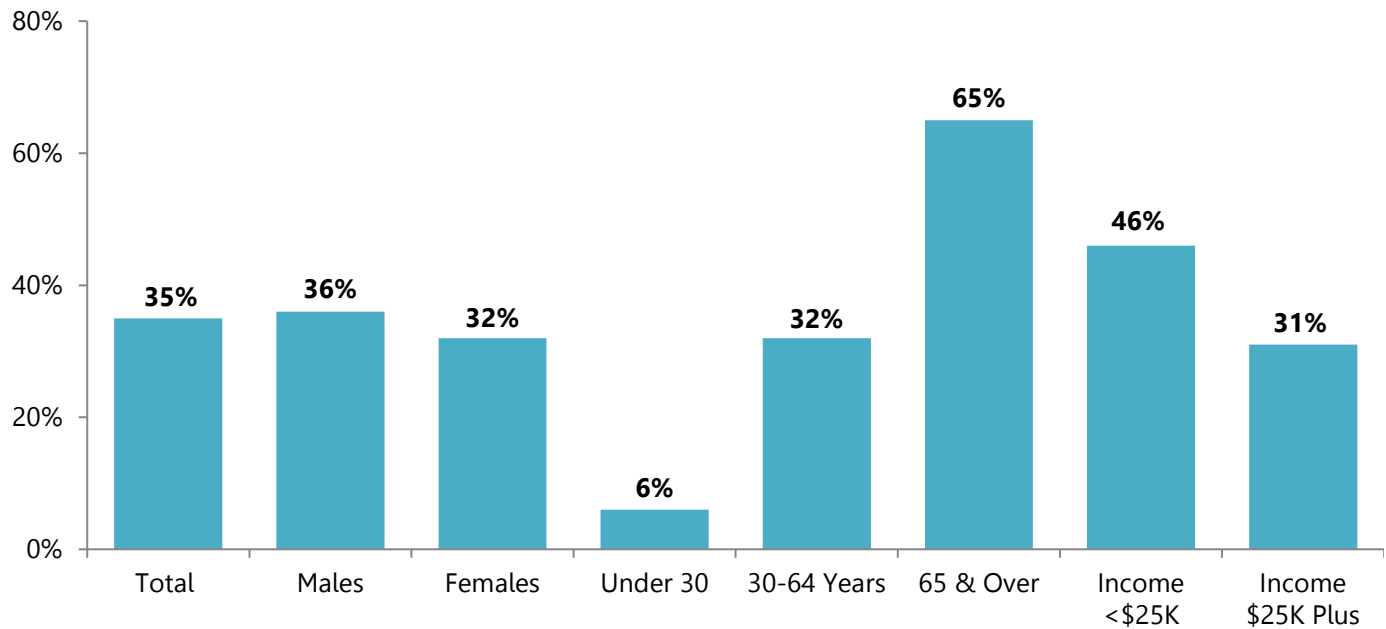
Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Had angina or coronary heart disease	5%	5%	4%
Had a heart attack	7%	5%	4%
Had a stroke	2%	4%	3%
Had been diagnosed with high blood pressure	35%	34%*	31%*
Had been diagnosed with high blood cholesterol	34%	37%*	36%*
Had blood cholesterol checked within past 5 years	77%	78%*	78%*

N/A – Not available

**2015 BRFSS data*

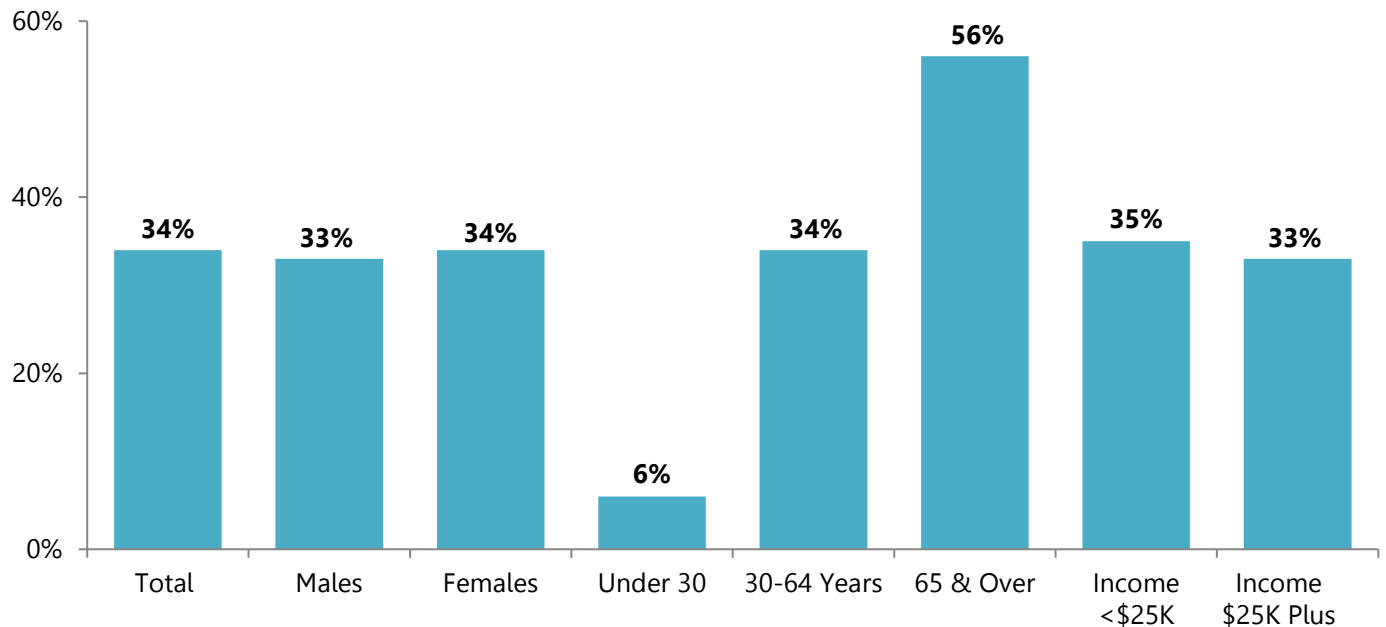
The following graphs show the number of Knox County adults who had been diagnosed with high blood pressure and high blood cholesterol. Examples of how to interpret the information on the first graph include: 35% of all Knox County adults had been diagnosed with high blood pressure, including 36% of all Knox County males, 32% of all females, and 65% of those 65 years and older.

Knox County Adults Diagnosed with High Blood Pressure



**Does not include respondents who indicated high blood pressure during pregnancy only.*

Knox County Adults Diagnosed with High Blood Cholesterol

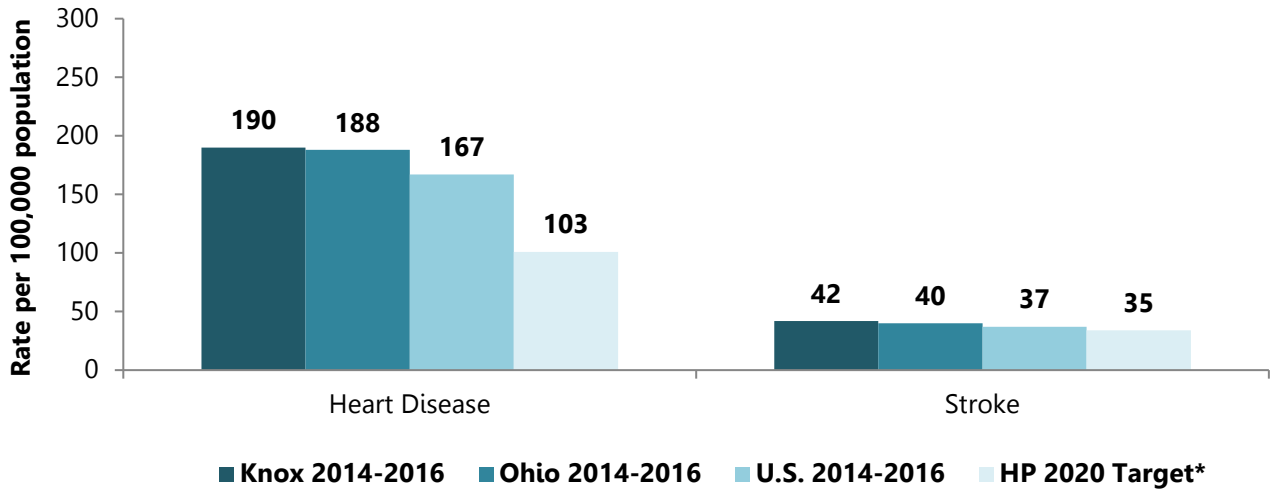


Note for graphs: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

The following graphs show the age-adjusted mortality rates per 100,000 population for heart disease and stroke.

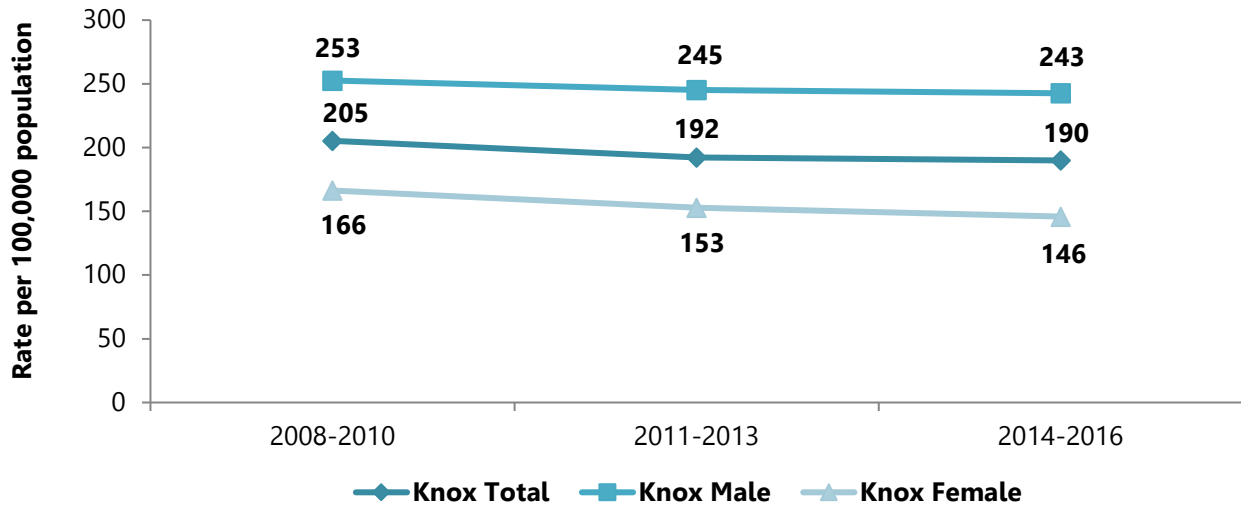
- When age differences are accounted for, the statistics indicate that from 2014-2016, Knox County heart disease mortality rate was greater than the figure for the state, the U.S., and the Healthy People 2020 target.
- The Knox County age-adjusted stroke mortality rate from 2014-2016 was higher than the state, the U.S. figure, and the Healthy People 2020 target objective.
- From 2008-2016, the total Knox County age-adjusted heart disease mortality rate decreased.

Age-Adjusted Heart Disease and Stroke Mortality Rates



*The Healthy People 2020 Target objective for coronary heart disease is reported for heart attack mortality.
 (Source: Ohio Public Health Data Warehouse, 2014-2016, CDC Wonder 2014-2016, Healthy People 2020)

Knox County Age-Adjusted Heart Disease Mortality Rates by Gender



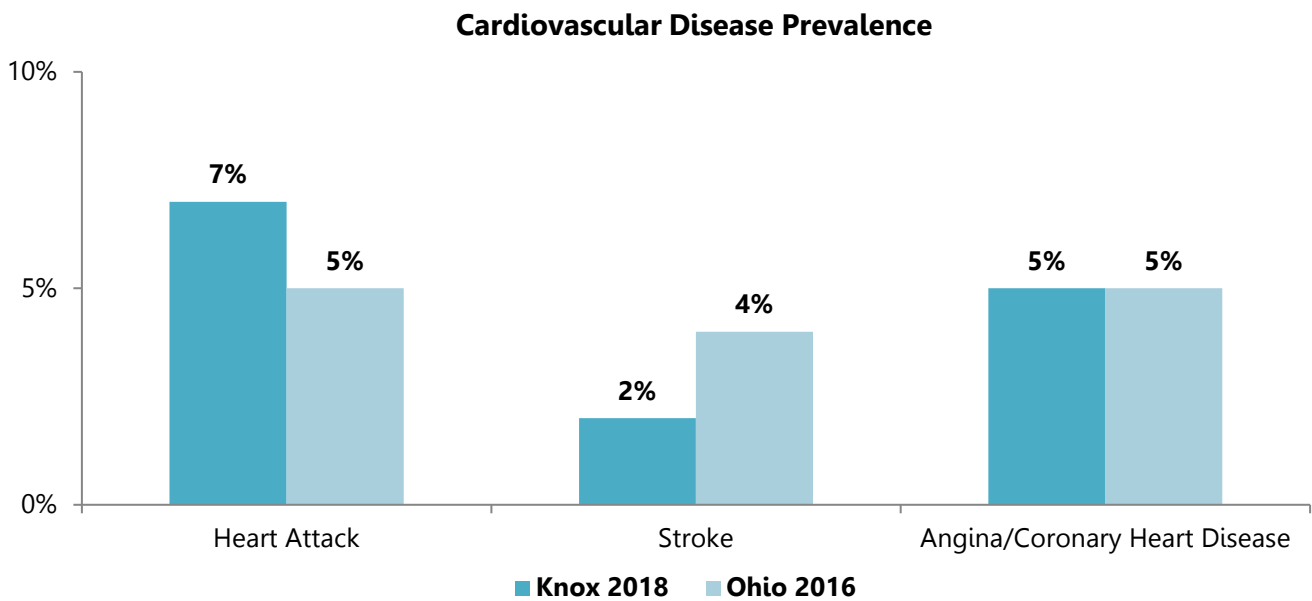
(Source: Ohio Public Health Data Warehouse, 2008-2016)

Healthy People 2020 Objectives Heart Disease and Stroke (HDS)

Objective	Knox Survey Population 2018	2015 U.S. Baseline	Healthy People 2020 Target
HDS-5.1: Reduce proportion of adults with hypertension	35%	31% Adults age 18 and up	27%
HDS-6: Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years	77%	75% Adults age 18 & up	82%
HDS-7: Decrease proportion of adults with high total blood cholesterol (TBC)	34%	36% Adults age 20+ with TBC>240 mg/dl	14%

*Note: All U.S. figures age-adjusted to 2000 population standard.
(Sources: Healthy People 2020, 2015 BRFSS, 2018 Knox County Health Assessment)*

The following graph shows the prevalence of cardiovascular disease among Knox County adults.

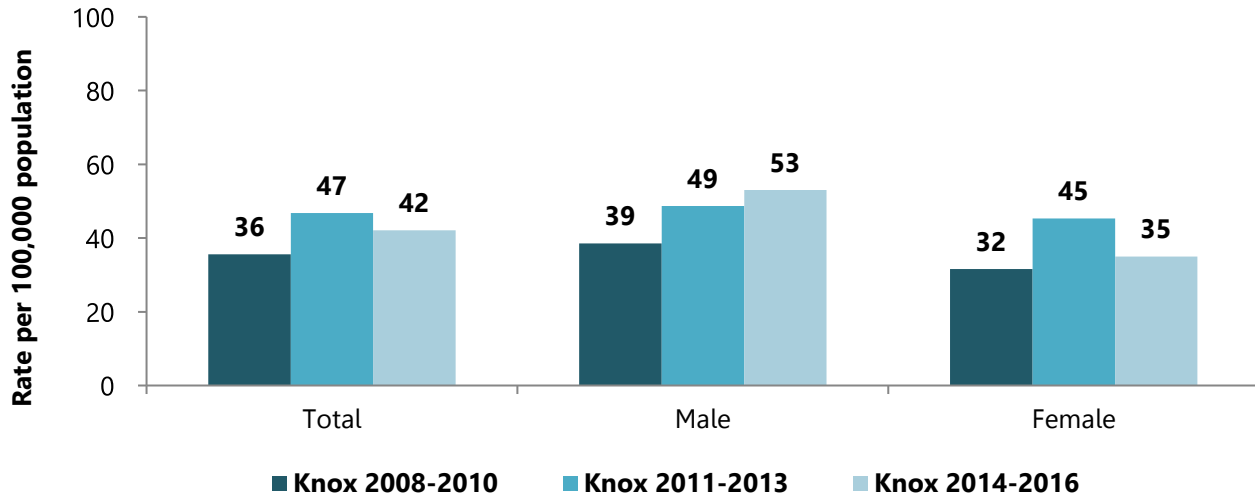


(Sources: 2018 Knox Health Assessment and 2016 BRFSS)

The following graph shows the age-adjusted mortality rates per 100,000 population stroke by gender.

- From 2008-2016, the Knox County stroke mortality rate was higher for males than for females.

Knox County Age-Adjusted Stroke Mortality Rates by Gender



(Source: Ohio Public Health Data Warehouse, 2008-2016)

Chronic Disease: Cancer

Key Findings

In 2018, 14% of Knox County adults had been diagnosed with cancer at some time in their lives. The American Cancer Society advises that avoiding tobacco products, maintaining a healthy weight, adopting a physically active lifestyle, eating more fruits and vegetables, limiting alcoholic beverages and early detection may reduce overall cancer deaths.

Adult Cancer

- Fourteen percent (14%) of Knox County adults were diagnosed with cancer at some point in their lives, increasing to 36% of those over the age of 65.
- Of those diagnosed with cancer, they reported the following types: other skin cancer (20%), breast (16%), melanoma (16%), prostate (9%), colon (8%), Hodgkin's lymphoma (6%), cervical (4%), endometrial (4%), lung (4%), head and neck (2%), oral (2%), brain (2%), rectal (2%), and other types of cancer (8%). Ten percent (10%) of adults reported multiple types of cancer.

Knox County Incidence of Cancer, 2011-2015

All Types: 1,816

- Lung and Bronchus: 263 cases (14%)
- Breast: 254 cases (14%)
- Prostate: 242 cases (13%)
- Colon and Rectum: 169 cases (9%)

In 2014-2016, there were 381 cancer deaths in Knox County.

(Source: Ohio Cancer Incidence Surveillance System, ODH Information Warehouse. Updated 3/26/18)

14% of Knox County adults had been diagnosed with cancer at some time in their life.

Cancer Facts

- The Ohio Department of Health (ODH) indicates that from 2014-2016, cancers caused 21% (381 of 1,853 total deaths) of all Knox County resident deaths. *(Source: Ohio Public Health Data Warehouse, 2014-2016).*
- In 2018, 15% of Knox County adults were current smokers, and many more were exposed to environmental tobacco smoke, also a cause of heart attacks and cancer. The American Cancer Society reports that smoking tobacco is associated with cancers of the mouth, lips, nasal cavity (nose) and sinuses, larynx (voice box), pharynx (throat), and esophagus (swallowing tube). Also, smoking has been associated with the following cancers: colorectal, stomach, pancreas, kidney, bladder, uterine cervix, ovary (mucinous) and acute myeloid leukemia.

Lung Cancer

- In Knox County, 14% of male adults were current smokers.
- ODH reports that lung and bronchus cancer (n=79) was the leading cause of male cancer deaths from 2014-2016 in Knox County, followed by prostate (n=22) and pancreatic (n=15) cancers. *(Ohio Public Health Data Warehouse, 2014-2016).*
- Approximately 17% of female adults in the county were current smokers.
- ODH reports that lung and bronchus cancer (n=47) was the leading cause of female cancer deaths in Knox County from 2014-2016, followed by breast (n=24) and pancreatic (n=21) cancers.
- According to the American Cancer Society, smoking causes 80% of lung cancer deaths in the U.S. Men and women who smoke are about 25 times more likely to develop lung cancer than nonsmokers *(Source: American Cancer Society, Facts & Figures 2018).*

Breast Cancer

- In 2018, 43% of Knox County females reported having had a clinical breast examination in the past year.
- More than two-fifths (43%) of Knox County females over the age of 40 had a mammogram in the past year.
- The 5-year relative survival for women diagnosed with localized breast cancer (cancer that has not spread to lymph nodes or other locations outside the breast) is 99% *(Source: American Cancer Society, Facts & Figures 2018)*.
- For women at average risk of breast cancer, recently updated American Cancer Society screening guidelines recommended that those 40 to 44 years of age have the choice of annual mammography; those 45 to 54 have annual mammography; and those 55 years of age and older have biennial or annual mammography, continuing as long as their overall health is good and life expectancy is 10 or more years. For some women at high risk of breast cancer, annual screening using magnetic resonance imaging (MRI) in addition to mammography is recommended, typically starting at age 30 *(Source: American Cancer Society, Facts & Figures 2018)*.

Prostate Cancer

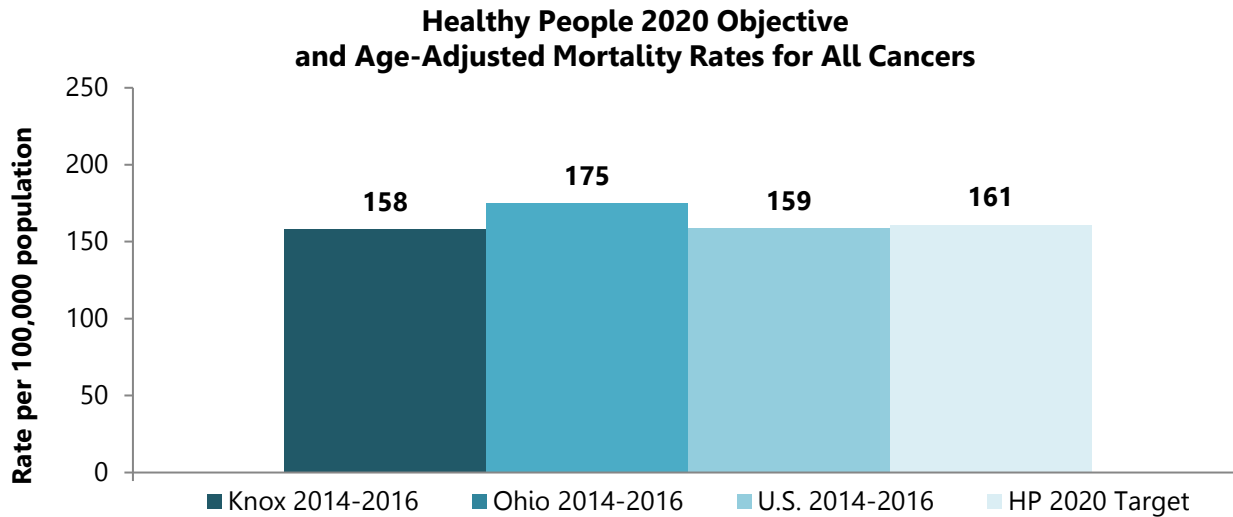
- ODH statistics indicate that prostate cancer accounted for 10% of all male cancer deaths from 2014-2016 in Knox County *(Source: Ohio Public Health Data Warehouse, 2014-2016)*.
- Incidence rates for prostate cancer are 74% higher in African Americans than in whites, and they are twice as likely to die of prostate cancer. Other risk factors include strong familial predisposition, diet high in processed meat or dairy foods, and obesity. African American men and Caribbean men of African descent have the highest documented prostate cancer incidence rates in the world *(Source: American Cancer Society, Facts & Figures 2018)*.

Colon and Rectum Cancers

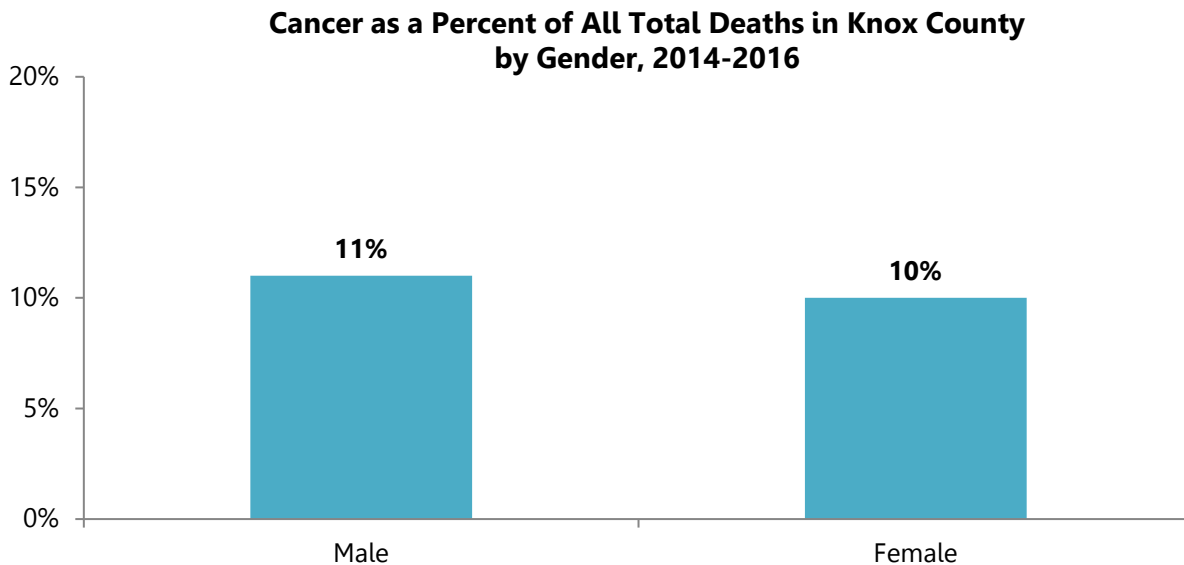
- ODH indicates that colon and rectum cancer accounted for 8% of all male and female cancer deaths from 2014-2016 in Knox County *(Source: Ohio Public Health Data Warehouse, 2014-2016)*.
- The American Cancer Society reports several risk factors for colorectal cancer, including age; personal or family history of colorectal cancer, polyps, or inflammatory bowel disease; obesity; physical inactivity; a diet high in red or processed meat; alcohol use; and long-term smoking. Very low intake of fruits and vegetables is also potentially a risk factor for colorectal cancer.
- In the U.S., 90% of colon cancers occur in individuals over the age of 50. Therefore, the American Cancer Society suggests every person over the age of 50 have regular colon cancer screenings. *(Source: American Cancer Society, Facts & Figures 2018)*.

The following graph shows the Knox County, Ohio and U.S. age-adjusted mortality rates (per 100,000 population, 2000 standard) for all types of cancer in comparison to the Healthy People 2020 objective. The graph indicates:

- When age differences are accounted for, Knox County had a lower cancer mortality rate than Ohio but a higher rate than the U.S. The Knox County age-adjusted cancer mortality rate was also lower than the Healthy People 2020 target objective.
- The percentage of Knox County males who died from all cancers was slightly higher than the percentage of Knox County females who died from all cancers.



(Source: Ohio Public Health Data Warehouse, 2014-2016, CDC Wonder, 2014-2016, Healthy People 2020)



(Source: Ohio Public Health Data Warehouse, 2014-2016)

Knox County Incidence of Cancer 2011-2015

Types of Cancer	Number of Cases	Percent of Total Incidence of Cancer	Age-Adjusted Rates
Lung and Bronchus	263	14%	69.0
Breast	254	14%	69.4
Prostate	242	13%	129.5
Colon and Rectum	169	9%	46.1
Other/Unspecified	135	7%	35.9
Non-Hodgkins Lymphoma	84	5%	23.6
Bladder	81	4%	21.0
Melanoma of Skin	77	4%	22.7
Cancer and Corpus Uteri	74	4%	38.1
Pancreas	65	4%	16.6
Leukemia	63	3%	16.8
Kidney and Renal Pelvis	59	3%	17.4
Oral Cavity & Pharynx	49	3%	12.4
Thyroid	49	3%	15.9
Multiple Myeloma	26	1%	6.6
Ovary	21	1%	11.5
Brain and CNS	18	1%	5.4
Larynx	17	1%	4.6
Liver and Bile Ducts	16	1%	4.2
Stomach	16	1%	4.4
Esophagus	14	1%	3.6
Cancer of Cervix Uteri	10	1%	5.9
Hodgkins Lymphoma	9	<1%	2.8
Testis	5	<1%	3.8
Total	1,816	100%	489.4

(Source: Ohio Cancer Incidence Surveillance System, ODH Public Health Data Warehouse, Updated 3/26/2018)

2018 Cancer Estimates

- In 2018, about 1,735,350 million new cancer cases are expected to be diagnosed.
- The World Cancer Research Fund estimates that about eighteen percent of the new cancer cases expected to occur in the U.S. in 2018 will be related to overweight or obesity, physical inactivity, and poor nutrition, and thus could be prevented.
- About 609,640 Americans are expected to die of cancer in 2018.
- Almost one third of cancer deaths are attributed to smoking.
- In 2018, estimates predict that there will be 56,590 new cases of cancer and 25,740 cancer deaths in Ohio.
- Of the new cancer cases, approximately 10,760 (16%) will be from lung and bronchus cancers and 5,550 (8%) will be from colon and rectum cancers.
- About 10,610 new cases of female breast cancer are expected in Ohio.
- New cases of male prostate cancer in Ohio are expected to be 5,810 (8%).

(Source: American Cancer Society, Facts and Figures 2018)

Chronic Disease: Arthritis

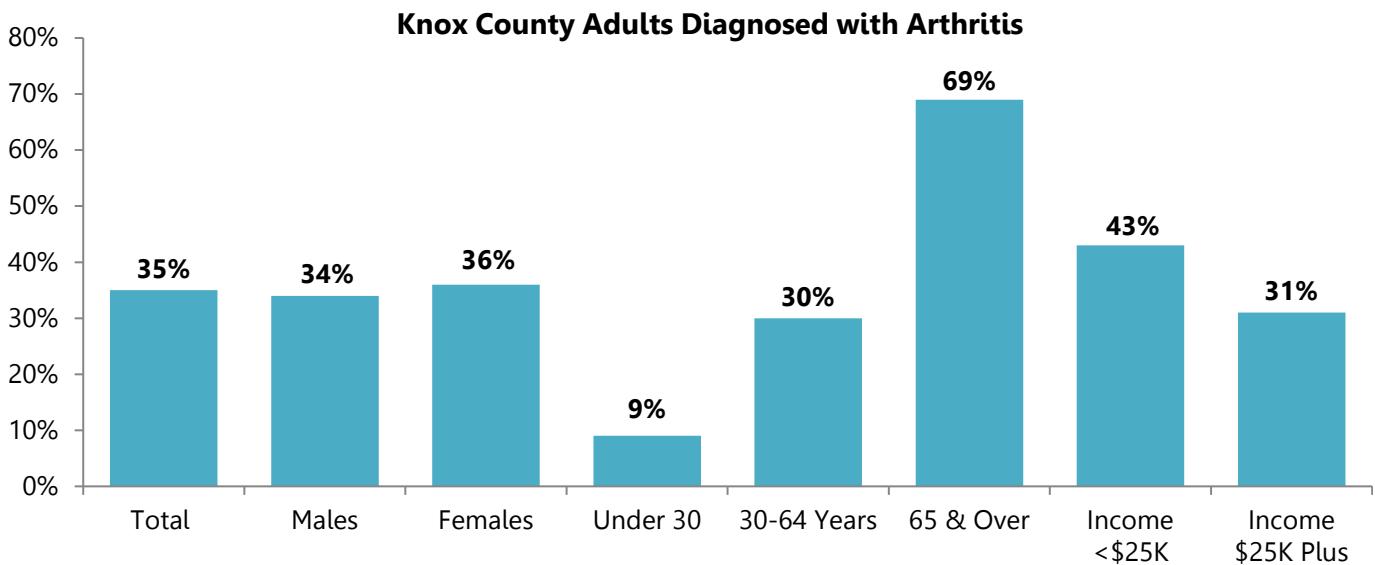
Key Findings

More than one-third (35%) of Knox County adults were diagnosed with arthritis. The 2016 BRFSS indicated that 31% of Ohio adults and 26% of U.S. adults were told they had arthritis.

Arthritis

- More than one-third (35%) of Knox County adults were told by a health professional that they had some form of arthritis, increasing to 69% of those over the age of 65.
- According to the 2016 BRFSS, 31% of Ohio adults and 26% of U.S. adults were told they have arthritis.
- More than three-fourths (77%) of adults diagnosed with arthritis were overweight or obese.
- Knox County adults were told by a health professional that they had the following: fibromyalgia (5%), gout (4%), rheumatoid arthritis (3%), and lupus (<1%).
- More than one-fifth (22%) of Knox County adults were limited in some way because of a physical, mental or emotional problem. Among those who were limited in some way, 43% were limited because of arthritis.
- An estimated 53 million U.S. adults (about 23%) report having doctor-diagnosed arthritis. By 2040, over 78 million people will have arthritis. Arthritis is more common among women (24%) than men (18%), and it affects all racial and ethnic groups. Arthritis commonly occurs with other chronic diseases—like diabetes, heart disease, and obesity—and can make it harder people to manage these conditions (Source: CDC, *Arthritis at a Glance 2017*).

The following graph shows the number of Knox County adults who had been diagnosed with arthritis. Examples of how to interpret the information include: 35% of all Knox County adults had been diagnosed with arthritis, including 69% of those over the age of 65, and 43% of those with incomes less than \$25,000.



Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Had been diagnosed with arthritis	35%	31%	26%

Arthritis: Key Public Health Messages

Early diagnosis of arthritis and self-management activities can help people decrease their pain, improve function, and stay productive.

Key self-management activities include the following:

- **Be Active** –Research has shown that physical activity decreases pain, improves function, and delays disability. Make sure you get at least 30 minutes of moderate physical activity at least 5 days a week. You can get activity in 10-minute intervals three times a day.
- **Watch your weight** – Research suggests that maintaining a healthy weight can decrease disease progression. For every pound lost, there is a 4-pound reduction in the load that is exerted on the knees.
- **See your doctor** –Early diagnosis and professionally guided management is very important to maintain a good quality of life, especially for those with inflammatory arthritis.
- **Protect your joints** –Joint injury can lead to osteoarthritis. People who experience sports or occupational injuries or have jobs with repetitive motions like repeated knee bending have more osteoarthritis. Avoid joint injury to reduce your risk of developing osteoarthritis.
- **Learn Arthritis Management Strategies-** Arthritis management strategies provide those with arthritis with the skills and confidence to effectively manage their condition. These techniques have proven to be valuable for helping people change their behavior and better manage their arthritis symptoms.

(Source: Centers for Disease Control and Prevention, Arthritis: Key Public Health Messages, February 2018)

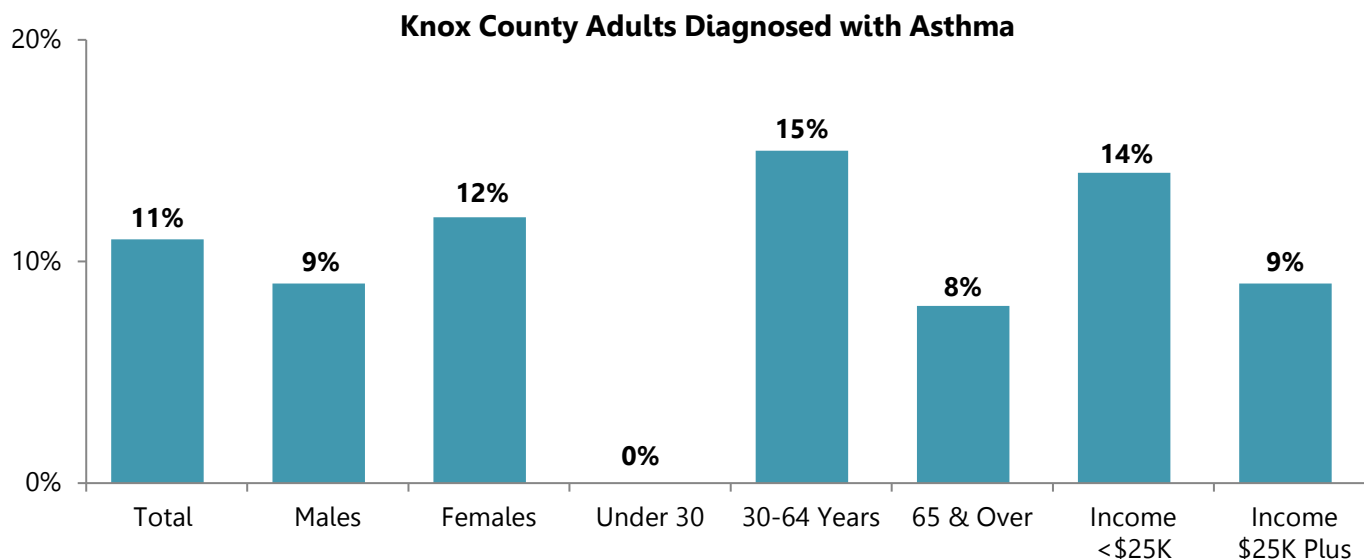
Chronic Disease: Asthma

Key Findings

One in nine (11%) Knox County adults had been diagnosed with asthma.

Asthma and Other Respiratory Disease

- In 2018, 11% (approximately 4,964) of Knox County adults had been diagnosed with asthma, increasing to 15% of those ages 30-64.
- Fourteen percent (14%) of Ohio and U.S. adults had ever been diagnosed with asthma *(Source: 2016 BRFSS)*.
- There are several important factors that may trigger an asthma attack. Some of these triggers are tobacco smoke; dust mites; outdoor air pollution; cockroach allergens; pets; mold; smoke from burning wood or grass; and infections linked to the flu, colds, and respiratory viruses *(Source: CDC, 2017)*.
- Chronic lower respiratory disease was the third leading cause of death in Knox County and the third leading cause of death in Ohio from 2014-2016 *(Source: Ohio Public Health Data Warehouse, 2014-2016)*

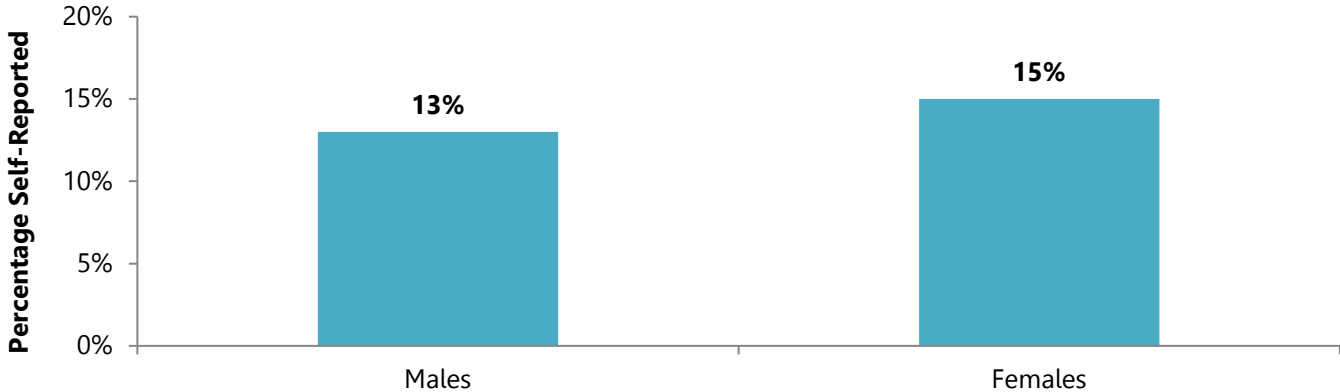


Note: Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

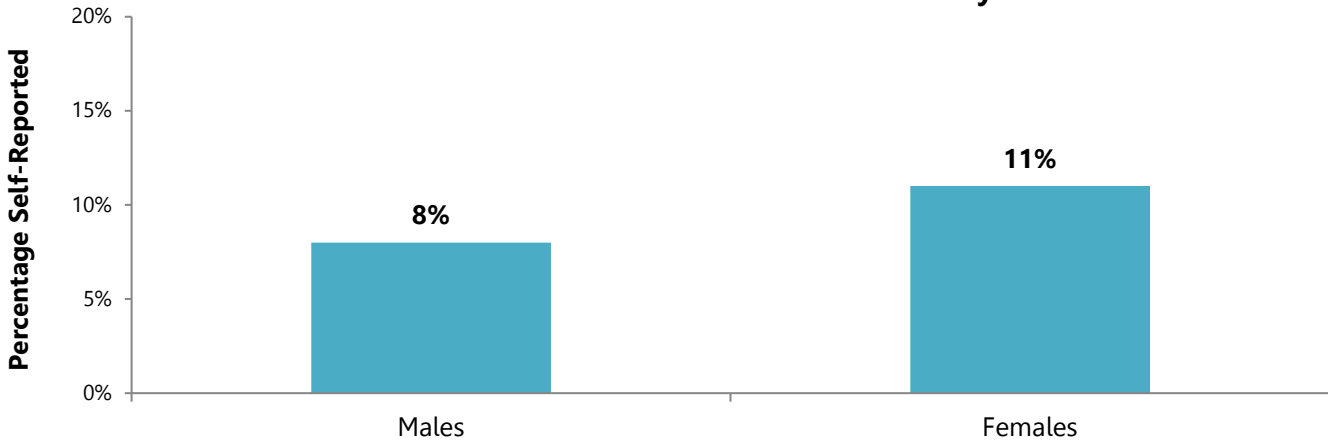
Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Had been diagnosed with asthma	11%	14%	14%

The following graphs demonstrate the lifetime and current prevalence rates of asthma by gender for Ohio residents.

Ohio Adult Lifetime Asthma Prevalence Rates By Gender



Ohio Adult Current Asthma Prevalence Rates By Gender



(Source: 2016 BRFSS)

Asthma Facts

- The number of Americans with asthma grows every year. Currently, 26 million Americans have asthma.
- Asthma mortality is almost 4,000 deaths per year.
- Asthma results in 439,000 hospitalizations and 1.8 million emergency room visits annually.
- Patients with asthma reported 14.2 million visits to a doctor’s office and 1.3 million visits to hospital outpatient departments.
- Effective asthma treatment includes monitoring the disease with a peak flow meter, identifying and avoiding allergen triggers, using drug therapies including bronchodilators and anti-inflammatory agents, and developing an emergency plan for severe attacks.

(Source: American College of Allergy, Asthma, & Immunology, Asthma Facts, updated 4/22/16)

What Causes an Asthma Attack?

- **Tobacco Smoke:** People should never smoke near you, in your home, in your car, or wherever you may spend a lot of time if you have asthma. Tobacco smoke is unhealthy for everyone, especially people with asthma. If you have asthma and you smoke, quit smoking.
- **Dust Mites:** If you have asthma, dust mites can trigger an asthma attack. To prevent attacks, use mattress covers and pillowcase covers to make a barrier between dust mites and yourself. Do not use down-filled pillows, quilts, or comforters. Remove stuffed animals and clutter from your bedroom.
- **Outdoor Air Pollution:** This pollution can come from factories, automobiles, and other sources. Pay attention to air quality forecasts to plan activities when air pollution levels will be low.
- **Cockroach Allergens:** Get rid of cockroaches in your home by removing as many water and food sources as you can. Cockroaches are often found where food is eaten and crumbs are left behind. Cockroaches and their droppings can trigger an asthma attack, so vacuum or sweep areas that might attract cockroaches at least every 2 to 3 days.
- **Pets:** Furry pets can trigger an asthma attack. If you think a furry pet may be causing attacks, you may want to find the pet another home. If you can't or don't want to find a new home for a pet, keep it out of the person with asthma's bedroom.
- **Mold:** Breathing in mold can trigger an asthma attack. Get rid of mold in your home to help control your attacks. Humidity, the amount of moisture in the air, can make mold grow. An air conditioner or dehumidifier will help keep the humidity level low.
- **Smoke from Burning Wood or Grass:** Smoke from burning wood or other plants is made up of a mix of harmful gases and small particles. Breathing in too much of this smoke can cause an asthma attack. If you can, avoid burning wood in your home.
- **Other Triggers:** Infections linked to influenza (flu), colds, and respiratory syncytial virus (RSV) can trigger an asthma attack. Sinus infections, allergies, breathing in some chemicals, and acid reflux can also trigger attacks. Physical exercise, some medicines, bad weather, breathing in cold air, some foods, and fragrances can also trigger an asthma attack.

(Source: Centers for Disease Control, Asthma, Common Asthma Triggers, retrieved on 12/17/17)

Chronic Disease: Diabetes

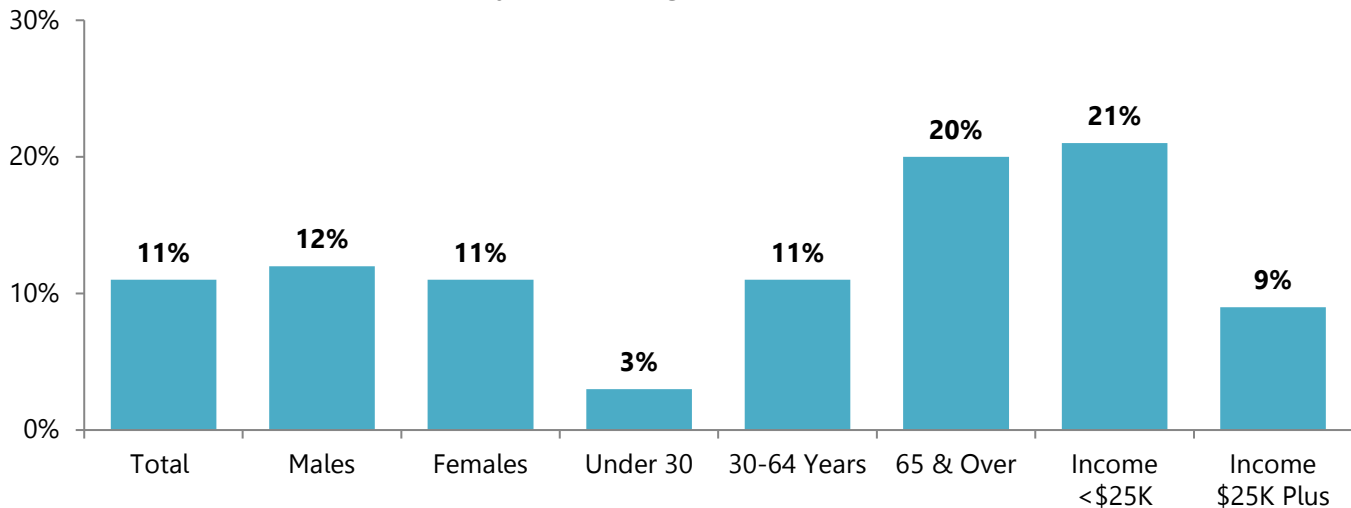
Key Findings

In 2018, 11% of Knox County adults had been diagnosed with diabetes. Almost one-third (30%) of adults with diabetes rated their health as fair or poor.

Diabetes

- In 2018, 11% (approximately 4,964) of Knox County adults had been diagnosed with diabetes, increasing to 20% of those over the age of 65 and 21% of those with incomes less than \$25,000. The 2016 BRFSS reports an Ohio and U.S. prevalence of 11%.
- Ninety-four percent (94%) of adults with diabetes were receiving treatment for it.
- Knox County adults were using the following to treat their diabetes: diet control (66%), checking blood sugar (48%), annual vision exam (45%), exercise (44%), diabetes pills (44%), checking A1C annually (39%), checking their feet (39%), 6-month check-up with provider (34%), insulin (19%), dental exam (16%), taking a class (8%), and injectables (3%).
- Almost one-third (30%) of adults with diabetes rated their health as fair or poor.
- Knox County adults diagnosed with diabetes also had one or more of the following characteristics or conditions:
 - 90% were obese or overweight
 - 69% had been diagnosed with high blood cholesterol
 - 68% had been diagnosed with high blood pressure

Knox County Adults Diagnosed with Diabetes*



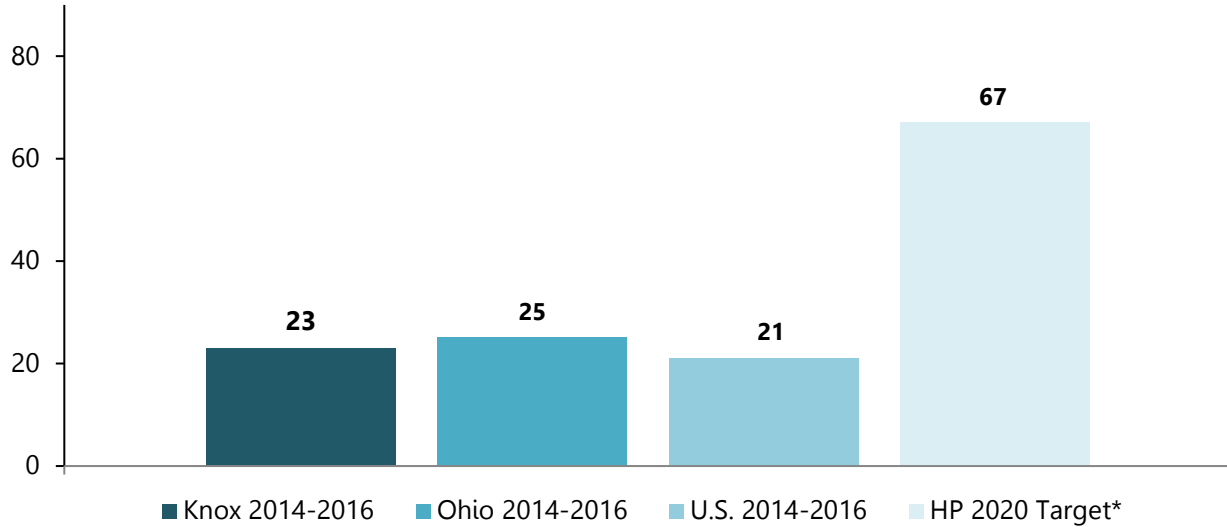
*Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Adult Comparisons	Knox County 2018	Ohio 2016	U.S. 2016
Diagnosed with diabetes	11%	11%	11%

The following graph shows the age-adjusted mortality rates from diabetes for Knox County and Ohio residents with comparison to the Healthy People 2020 target objective.

- From 2014-2016, Knox County's age-adjusted diabetes mortality rate was lower than the Ohio rate and the Healthy People 2020 target objective but higher than the U.S. rate.

Healthy People 2020 Objectives and Age-Adjusted Mortality Rates for Diabetes



**Note: The Healthy People 2020 rate is for all diabetes-related deaths
 (Source: Ohio Public Health Data Warehouse, 2014-2016, CDC Wonder, 2014-2016, Healthy People 2020)*

Statistics About Diabetes

- In 2015, 30.3 million Americans, or 9.4% of the population, had diabetes. Approximately 1.25 million American children and adults have type 1 diabetes.
- Of the 30.3 million, 7.2 million were undiagnosed.
- 84.1 million Americans have prediabetes.
- 1.5 million Americans are diagnosed with diabetes every year.
- American Indians/Alaska Natives had a higher prevalence rate for diabetes.
- An estimated, 34% of people had prediabetes, increasing to 48% of those ages 65 and older.
- In 2014, 7.2 million hospital discharges and 14.2 million emergency department visits were due to diabetic complications.
- The economic cost of diagnosed diabetes in the U.S. is \$245 billion per year.
- Diabetes is the primary cause of death for 79,535 Americans each year, and contributes to the death of 252,806 Americans annually.

(Source: American Diabetes Association, Statistics About Diabetes, Overall Numbers, Diabetes and Prediabetes, 2017)



DIABETES

Risk factors for type 2 diabetes

Genetics, age and family history of diabetes can increase the likelihood of becoming diabetic and cannot be changed. **But some behaviours that increase risk can:**



Unhealthy diet



1 in 3 is overweight



Physical inactivity



1 in 10 is obese

KEY ACTIONS

FOR EVERYONE



Eat healthily



Be physically active



Avoid excessive weight gain



Check blood glucose if in doubt



Follow medical advice

FOR GOVERNMENTS



Healthy Environments

ENSURE



Better Diagnosis & Treatment



Better Data

Chronic Disease: Quality of Life

Key Findings

In 2018, 22% of Knox County adults were limited in some way because of a physical, mental or emotional problem. Arthritis/rheumatism (43%) and back/neck problems (43%) were reported as the most limiting problems in Knox County.

Impairments and Health Problems

- In 2018, more than one-fifth (22%) of Knox County adults were limited in some way because of a physical, mental or emotional problem (21% Ohio, 21% U.S., 2015 BRFSS), increasing to 36% of those over the age of 65.
- Among those who were limited in some way, the following most limiting problems or impairments were reported: arthritis/rheumatism (43%); back or neck problems (43%); stress, depression, anxiety, or emotional problems (29%); walking problems (24%); chronic pain (24%); fitness level (22%); sleep problems (21%); fractures, bone/joint injuries (17%); chronic illness (15%); mental health illness/disorder (14%); hearing problems (11%); eye/vision problems (11%); lung/breathing problems (9%); dental problems (5%); memory loss (4%); confusion (4%); drug addiction (3%); substance dependency (1%); and other impairments/problems (5%).
- Knox County adults were responsible for providing regular care or assistance to the following: multiple children (22%); an elderly parent or loved one (12%); a friend, family member or spouse with a health problem (10%); grandchildren (7%); an adult child (5%); someone with special needs (3%); a friend, family member or spouse with a mental health issue (3%); a friend, family member or spouse with dementia (3%); children with discipline issues (2%); children whose parents used drugs and were unable to care for them (1%); children whose parents lost custody for other reasons (1%); and foster children (1%).

Adult Comparisons	Knox County 2018	Ohio 2016	U.S 2016
Limited in some way because of a physical, mental, or emotional problems	22%	21%*	21%*

*2015 BRFSS Data

Healthy People 2020

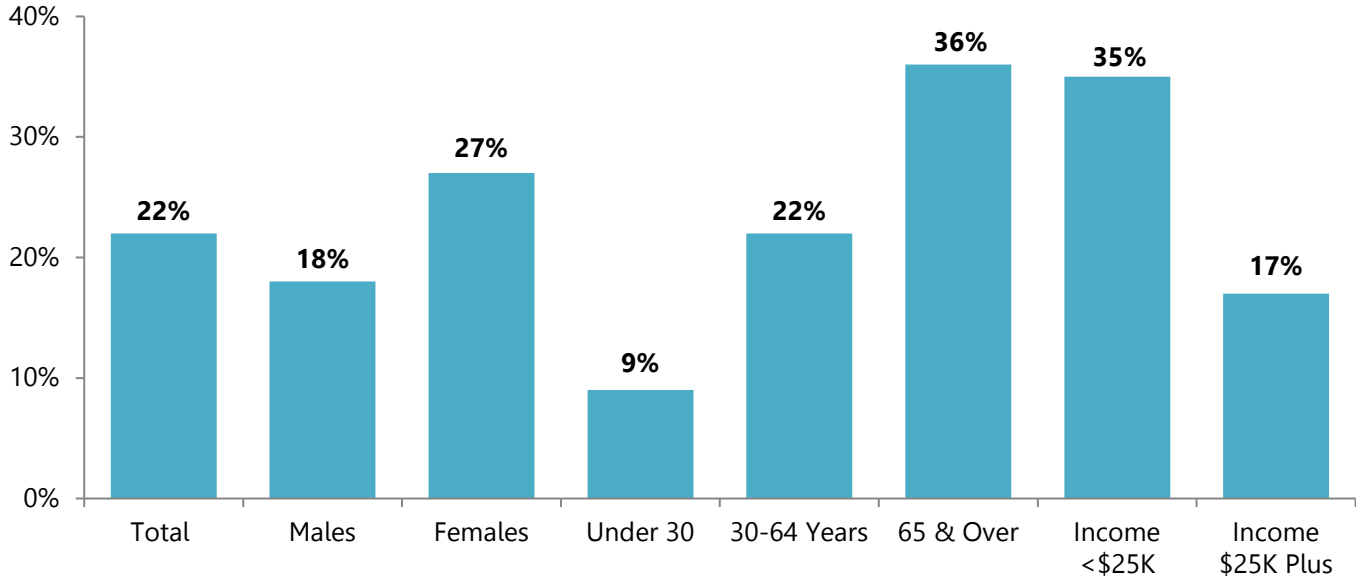
Arthritis, Osteoporosis, and Chronic Back Conditions (AOCBC)

Objective	Knox County 2018	Healthy People 2020 Target
AOCBC-2: Reduce the proportion of adults with doctor-diagnosed arthritis who experience a limitation in activity due to arthritis or joint symptoms	43%	36%

Note: U.S. baseline is age-adjusted to the 2000 population standard
(Sources: Healthy People 2020 Objectives, 2018 Knox County Health Assessment)

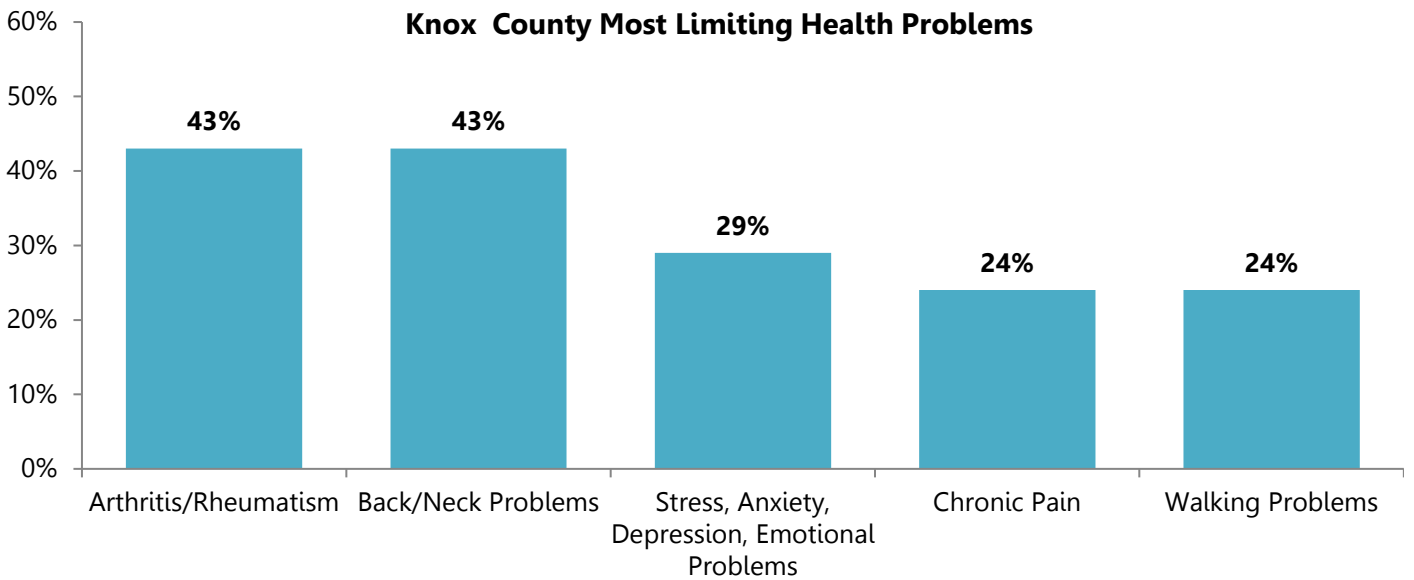
The following graphs show the percentage of Knox County adults that were limited in some way and the most limiting health problems. Examples of how to interpret the information shown on the graph include: 22% of Knox County adults were limited in some way, including 18% of males, and 36% of those 65 and older.

Knox County Adults Limited in Some Way*



*Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey.

Knox County Most Limiting Health Problems



Social Conditions: Social Determinants of Health

Key Findings

In 2018, 5% of Knox County adults were abused in the past year (including physical, sexual, emotional, financial, or verbal abuse). Eleven percent (11%) of adults needed help meeting their general daily needs. More than three-fifths (62%) of Knox County adults kept a firearm in or around their home.

Healthy People 2020

- Healthy People 2020 developed five key determinants as a “place-based” organizing framework. These five determinants include:
 - Economic stability
 - Education
 - Social and community context
 - Health and health care
 - Neighborhood and built environment



Economic Stability

- Eleven percent (11%) of Knox County adults needed help meeting their general daily needs such as food, clothing, shelter or paying utilities in the past month, increasing to 34% of those with incomes less than \$25,000.
- Knox County adults received assistance for the following in the past year: health care (11%), Medicare (11%), food (9%), dental care (8%), prescription assistance (8%), mental illness issues (7%), utilities (6%), employment (4%), rent/mortgage (3%), home repair (3%), free tax preparation (3%), transportation (2%), affordable childcare (1%), legal aid services (1%), credit counseling (1%), diapers (1%), unplanned pregnancy (1%), drug or alcohol addiction (1%), clothing (<1%), post-incarceration issues (<1%), and gambling addiction (<1%).
- Nearly half (48%) of adults spent less than 30% of their income on housing. Seven percent (7%) of adults spent more than 50% of their income on housing, and 29% spent 30-50%.
- More than three-fourths (78%) of adults owned their home. Sixteen percent (16%) rented their home, and 6% had some other arrangement.
- The median household income in Knox County was \$48,533. The U.S. Census Bureau reports median income levels of \$50,674 for Ohio and \$55,332 for the U.S. (Source: U.S. Census Bureau, Small Area Income and Poverty Estimates).
- Twenty percent (20%) of all Knox County residents were living in poverty, and 29% of children and youth ages 0-17 were living in poverty (Source: U.S. Census Bureau, Small Area Income and Poverty Estimates, 2016).
- The unemployment rate for Knox County was 5.1 as of January 2018 (Source: Ohio Department of Job and Family Services, Office of Workforce Development, Bureau of Labor Market Information).
- Rent in Knox County cost an average of \$699 per month (Source: U.S. Census Bureau, American Community Survey, 2011-2015).

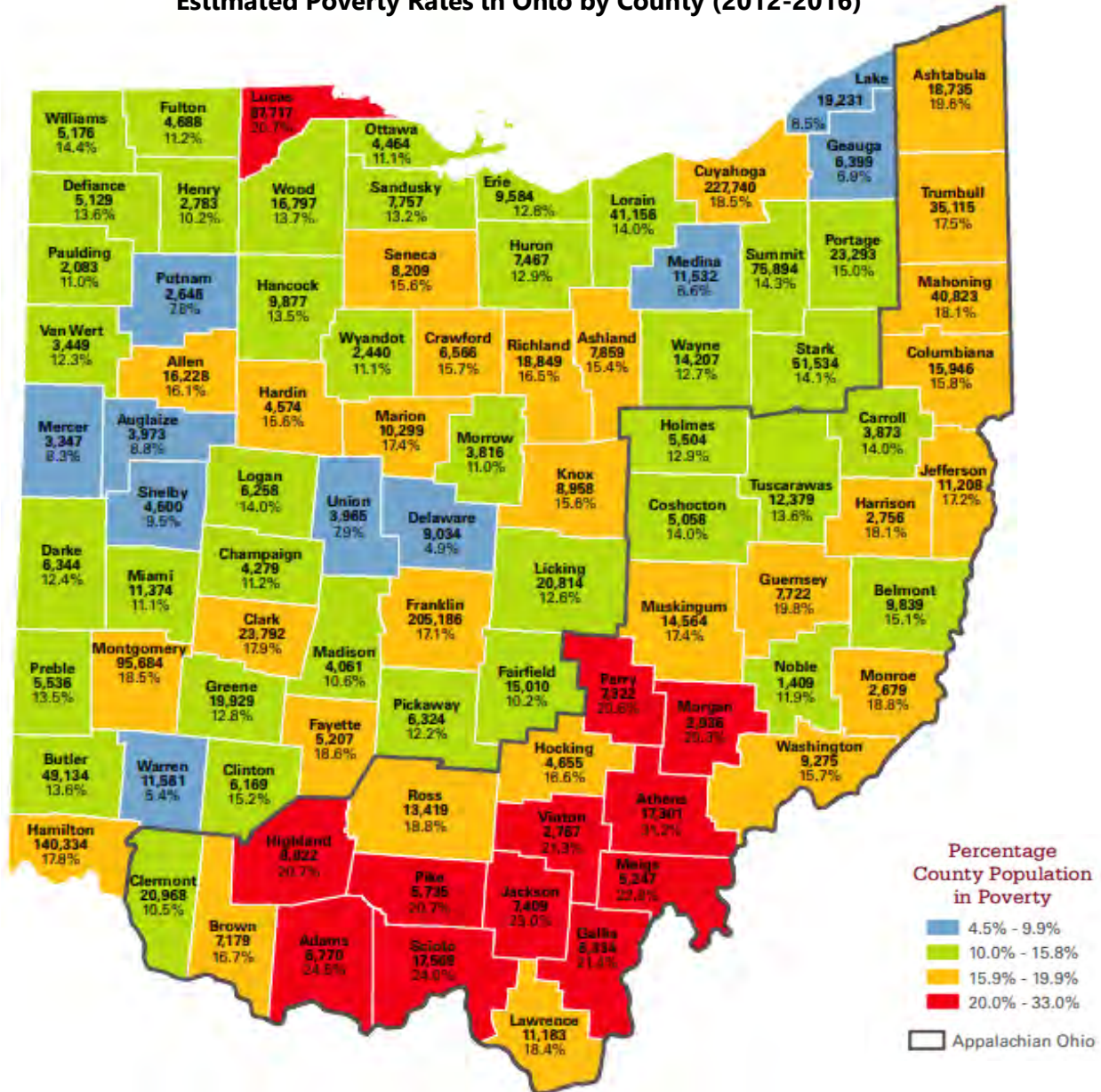
Education

- Ninety percent (90%) of Knox County adults 25 years and over had a high school diploma or higher (Source: U.S. Census Bureau, American Community Survey, 2012-2016).
- Twenty-two percent (22%) of Knox County adults 25 years and over had at least a bachelor's degree (Source: U.S. Census Bureau, American Community Survey, 2012-2016).

The map below shows the variation in poverty rates across Ohio during the 2012-2016 period.

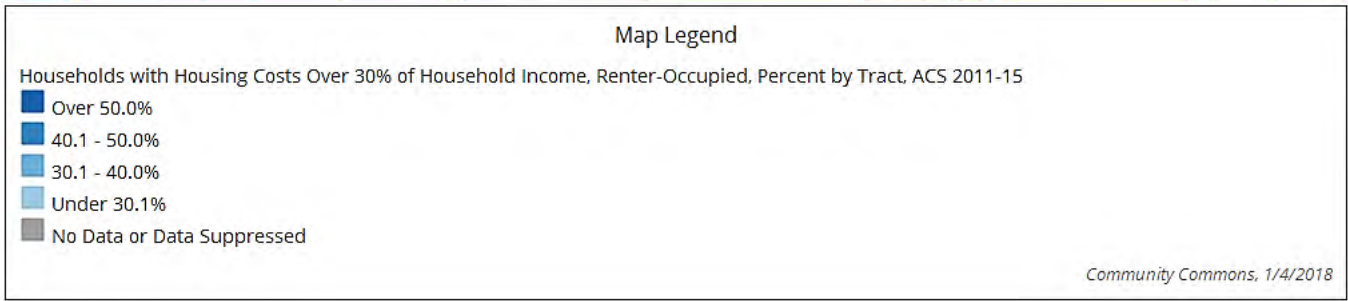
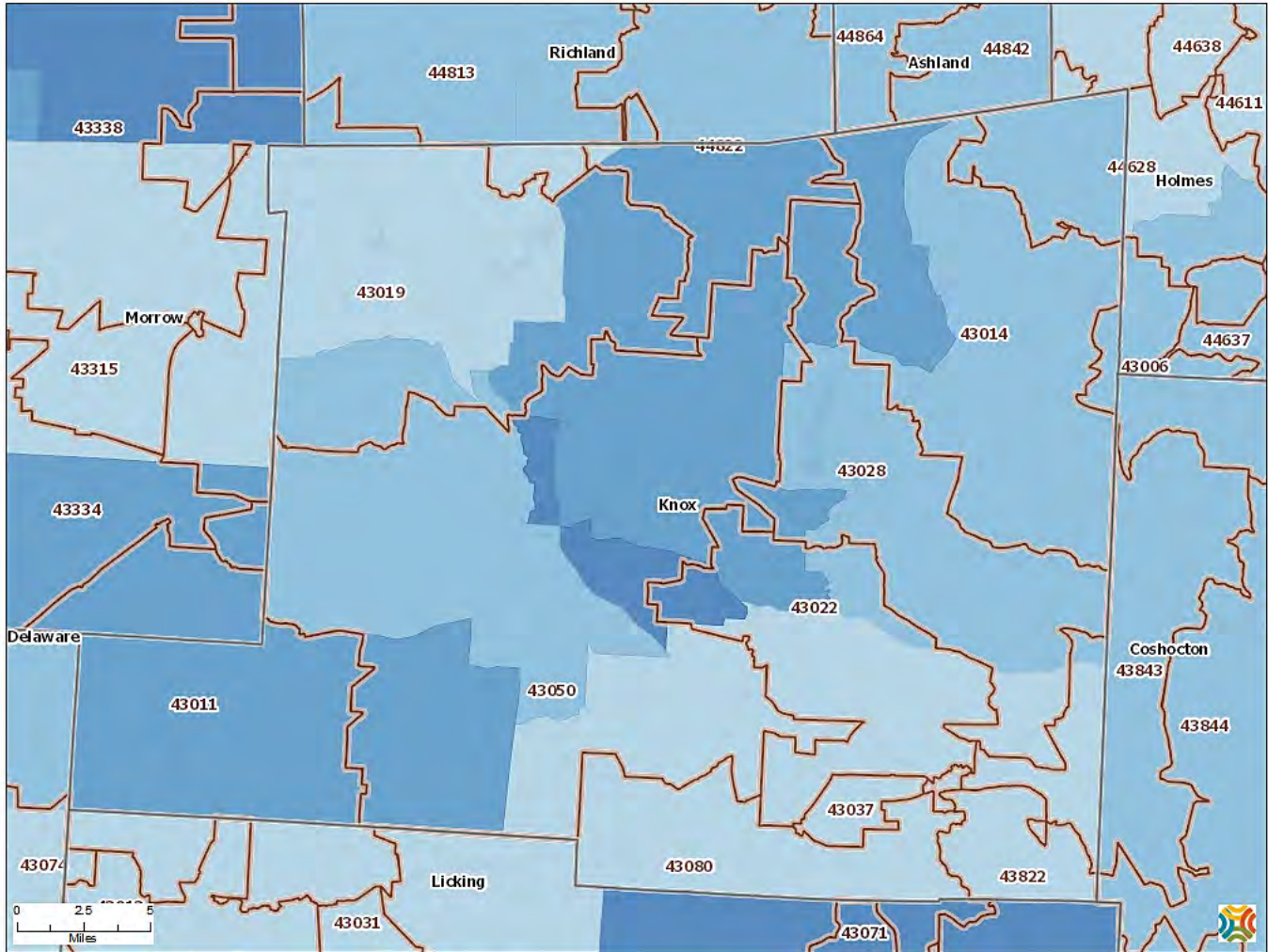
- The 2012-2016 American Community Survey 5-year estimates report that approximately 1,639,636 Ohio residents, or 14.5% of the population, were in poverty.
- From 2012-2016, 15.6% of Knox County residents were in poverty.

Estimated Poverty Rates in Ohio by County (2012-2016)



(Source: 2012-2016 American Community Survey 5-year estimates, as compiled by Ohio Development Services Agency, Office of Research, Ohio Poverty Report, February 2018)

Households with Housing Costs Over 30% of Household Income, Renter-Occupied, ACS 2011-15



(Source: U.S. Census Bureau, American Community Survey, 2011-2015, as compiled by Community Commons)

Social and Community Context

- More than one-fourth (28%) of adults reported that every family member who lived in their household ate a meal together every day of the week. Families ate a meal together an average of 4.0 times per week.
- Five percent (5%) of Knox County adults were abused in the past year. Of those who were abused, they were abused in the following ways: verbally (72%), emotionally (67%), physically (33%), financially (22%), and through electronic methods (17%).
- Knox County adults experienced the following food insecurity issues in the past 12 months: had to choose between paying bills and buying food (8%); were worried food would run out (7%); their food assistance was cut (6%); they were hungry, but did not eat because they had no money for food (4%); went hungry/ate less to provide more food for their family (3%); and loss of income led to food insecurity (3%).
- Knox County adults experienced the following in the past 12 months: a close family member went to the hospital (34%); death of a family member or close friend (31%); had bills they could not pay (12%); decline in their health (10%); moved to a new address (10%); they were a caregiver (9%); someone close to them had a problem with drinking or drugs (9%); someone in their household lost their job/had their hours at work reduced (7%); household income was cut by 50% (7%); were threatened or abused by someone physically, emotionally, sexually and/or verbally (4%); had someone homeless living with them (2%); knew someone living in a hotel (2%); their child was threatened or abused by someone physically, emotionally, sexually and/or verbally (2%); were homeless (2%); and witnessed someone in their family being hit or slapped (2%); their family was at risk for losing their home (1%); and they became separated or divorced (1%).
- Knox County adults had the following transportation issues: no car (4%), other car issues/expenses (4%), suspended/no driver's license (2%), could not afford gas (2%), disabled (2%), no car insurance (2%), limited public transportation available or accessible (1%), did not feel safe to drive (1%), no public transportation available or accessible (1%), and horse issues (<1%).
- Knox County adults reported the following adverse childhood experiences (ACEs): their parents became separated or were divorced (22%); a parent or adult in their home swore at, insulted, or put them down (21%); lived with someone who was a problem drinker or alcoholic (21%); lived with someone who was depressed, mentally ill, or suicidal (15%); a parent or adult in their home hit, beat, kicked, or physically hurt them (11%); someone at least 5 years older than them or an adult touched them sexually (9%); their family did not look out for each other, feel close to each other, or support each other (7%); their parents or adults in their home slapped, hit, kicked, punched, or beat each other up (7%); lived with someone who used illegal stress drugs, or who abused prescription medications (6%); someone at least 5 years older than them or an adult tried to make them touch them sexually (5%); they did not have enough to eat, had to wear dirty clothes, and had no one to protect them (4%); lived with someone who served time or was sentenced to serve time in prison, jail or other correctional facility (4%); someone at least 5 years older than them or an adult forced them to have sex (3%); and their parents were not married (2%).
- One in eight (13%) adults experienced 4 or more ACEs, increasing to 55% of those who contemplated suicide in the past year.

Social Determinants of Health

- Social determinants of health are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.
- Conditions (e.g., social, economic, and physical) in these various environments and settings (e.g., school, church, workplace, and neighborhood) have been referred to as "place." In addition to the more material attributes of "place," the patterns of social engagement and sense of security and well-being are also affected by where people live.
- Resources that enhance quality of life can have a significant influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/health services, and environments free of life-threatening toxins.
- Understanding the relationship between how population groups experience "place" and the impact of "place" on health is fundamental to the social determinants of health—including both social and physical determinants.

(Source: Healthy People 2020, Updated 12/11/17)

Behaviors of Knox County Adults
Experienced 4 or More ACEs vs. Did Not Experience Any ACEs

Adult Behaviors	Experienced 4 or More ACEs	Did Not Experience Any ACEs
Classified as overweight or obese by BMI	74%	73%
Current drinker (had at least one alcoholic beverage in the past month)	53%	47%
Binge drinker (drank 5 or more drinks for males and 4 or more for females on an occasion)	41%	31%
Current smoker (currently smoke on some or all days)	25%	10%
Contemplated suicide (in the past 12 months)	13%	1%
Used recreational drugs (in the past 6 months)	15%	3%
Misused prescription medication (in the past 6 months)	17%	5%

Adverse Childhood Experiences (ACEs)

- Adverse childhood experiences (ACEs) are stressful or traumatic events, including abuse and neglect. They may also include household dysfunction such as witnessing domestic violence or growing up with family members who have substance use disorders. Some ACEs include:
 - Physical abuse
 - Sexual abuse
 - Mother treated violently
 - Physical/emotional neglect
 - Emotional abuse
 - Household mental illness
 - Parental separation or divorce
 - Incarcerated household member
 - Substance misuse within household
 - Intimate partner violence
- Preventing ACEs and engaging in early identification of people who have experienced them could have a significant impact on a range of critical health problems. You can strengthen your substance misuse prevention efforts by: increasing awareness of ACEs among state and community level substance misuse prevention professionals, emphasizing the relevance of ACEs to behavioral health disciplines.
- Research has demonstrated a strong relationship between ACEs, substance use disorders, and behavioral problems. When children are exposed to chronic stressful events, their neurodevelopment can be disrupted. As a result, the child’s cognitive functioning or ability to cope with negative or disruptive emotions may be impaired. Over time, and often during adolescence, the child may adopt negative coping mechanisms, such as substance use or self-harm. Eventually, these unhealthy coping mechanisms can contribute to disease, disability, and social problems, as well as premature mortality.

(Source: SAMHSA, Adverse Childhood Experiences, Updated 09/05/2017)

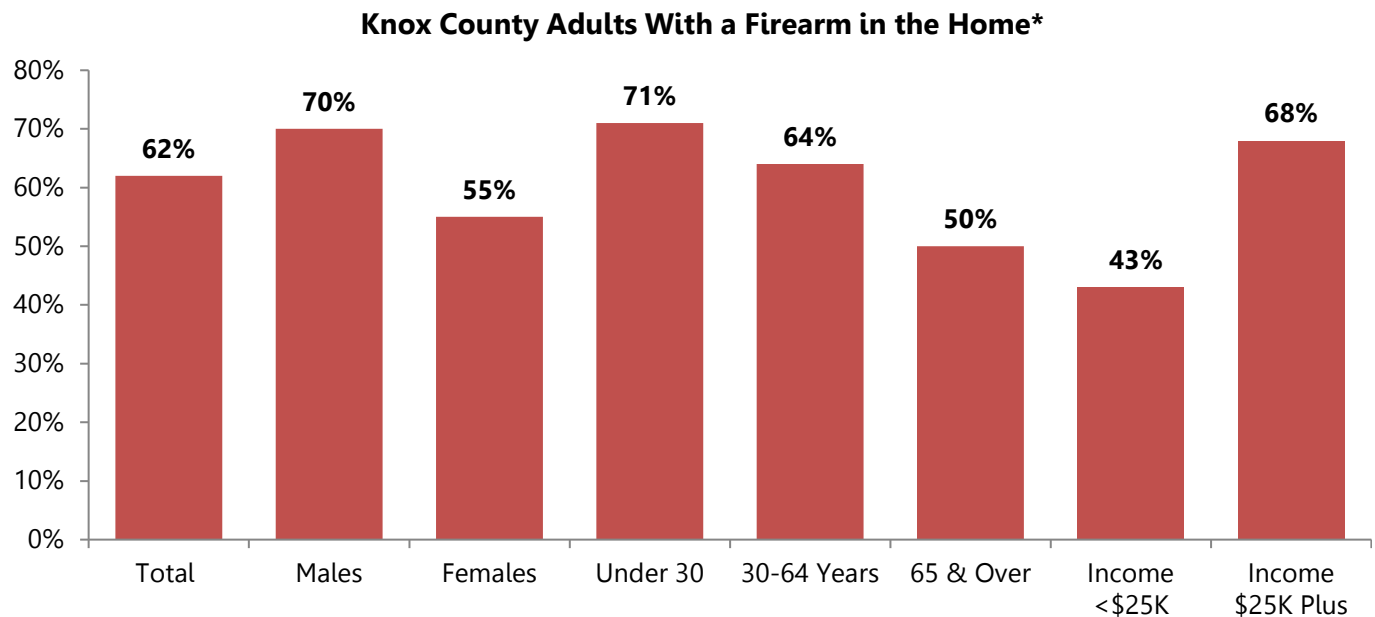
Health and Health Care

- In the past year, 11% of Knox County adults were uninsured, increasing to 15% of those with incomes less than \$25,000. The 2016 BRFSS reported uninsured prevalence rates of 7% for Ohio and 10% for the U.S
- Knox County adults had the following issues regarding their healthcare coverage: cost (31%), opted out of certain coverage because they could not afford it (9%), could not understand their insurance plan (6%), working with their insurance company (6%), provider no longer covered (5%), pre-existing conditions (4%), service not deemed medically necessary (4%), opted out of certain coverage because they did not need it (3%), limited visits (3%), and service no longer covered (2%).
- See the Health Perceptions, Health Care Coverage, and Health Care Access sections for further health and health care information for Knox County adults.

Neighborhood and Built Environment

- Knox County adults considered their neighborhood to be extremely safe (28%), quite safe (54%), slightly safe (14%), and not safe at all (1%) from crime.
- More than three-fifths (62%) of Knox County adults kept a firearm in or around their home. Seven percent (7%) of adults reported they were unlocked and loaded.

The following graph shows the percentage of Knox County adults who had a firearm in or around the home. Examples of how to interpret the information shown on the graph include: 62% of all Knox County adults had a firearm in or around the home, including 70% of males and 68% of those with incomes greater than \$25,000.



**Caution should be used when interpreting subgroup results as the margin of error for any subgroup is higher than that of the overall survey*

Social Conditions: Environmental Health

Key Findings

Knox County adults reported the following as the top three environmental issues that threatened their health in the past year: insects (8%), temperature regulation (6%), and moisture issues (5%). Seventy-nine percent (79%) of adults reported they had a working smoke detector in their home.

Disaster Preparedness

- Knox County households had the following disaster preparedness supplies: cell phone (87%), cell phone with texting (84%), working flashlight and working batteries (82%), working smoke detector (79%), computer/tablet (71%), 3-day supply of nonperishable food for everyone in the household (58%), 3-day supply of prescription medication for each person who takes prescribed medicines (49%), working battery-operated radio and working batteries (46%), generator (40%), 3-day supply of water for everyone in the household (1 gallon of water per person per day) (39%), home land-line telephone (32%), communication plan (19%), a disaster plan (12%), and a family disaster plan (11%).
- Knox County adults indicated the following as their main method or way of getting information from authorities in a large-scale disaster or emergency: television (73%), radio (65%), friends/family (65%), internet (63%), Knox County Emergency Alert System (45%), Facebook (43%), text messages (43%), wireless emergency alerts (40%), neighbors (37%), newspaper (26%), smart phone app (24%), landline phone (10%), Twitter (8%), other social media (8%), and other methods (1%). Four percent (4%) of adults indicated they did not carry a cell phone on a regular basis, and 2% had disabled wireless emergency alerts.

Environmental Health

- Knox County adults thought the following threatened their health in the past year:
 - Insects (8%)
 - Temperature regulation (6%)
 - Moisture issues (5%)
 - Bed bugs (4%)
 - Mold (4%)
 - Rodents (4%)
 - Plumbing problems (3%)
 - Air quality (2%)
 - Unsafe water supply/wells (2%)
 - Radon (2%)
 - Agricultural chemicals (1%)
 - Cockroaches (1%)
 - Household chemicals (1%)
 - Lead paint (1%)
 - Lice (1%)
 - Safety hazards (1%)
 - Sewage/waste water problems (1%)

Social Conditions: Parenting

Key Findings

More than half (55%) of parents discussed bullying and dating/relationships with their 12-to 17-year-old in the past year. More than four-fifths (83%) of parents reported their child had received all recommended immunizations.

Parenting

- Eighty-three percent (83%) of parents indicated their child had received all recommended immunizations. Reasons for not immunizing their child included the following: personal beliefs (4%), did not think immunization was necessary (3%), religious beliefs (1%), and other reasons (3%).
- In the past year, parents took their child to the doctor for the following: dental visits (65%), regular visits (63%), ear infections (26%), injuries (21%), asthma (7%), behavioral problems (5%), head lice (2%), and other visits (50%).
- Parents reported their child spent the following unsupervised time after school on an average school day: no unsupervised time (72%), less than one hour (14%), 1-2 hours (13%), and 3-4 hours (1%).
- Parents discussed the following health topics with their 12- to 17-year-old in the past year:
 - Bullying (55%)
 - Dating and relationships (55%)
 - Career plan/post-secondary education (52%)
 - Negative effects of alcohol, tobacco, illegal drugs, or misusing prescription drugs (50%)
 - Weight status (43%)
 - Abstinence and how to refuse sex (41%)
 - Volunteering (38%)
 - Body image (34%)
 - Social media issues (34%)
 - School/legal consequences of using tobacco/alcohol/other drugs (34%)
 - Refusal skills/peer pressure (29%)
 - Depression/anxiety/suicide (24%)
 - Energy drinks (24%)
 - Birth control/condom use/safer sex/STD prevention (19%)

Appendix I: Health Assessment Information Sources

Source	Data Used	Website
American Association of Suicidology	<ul style="list-style-type: none"> National Suicide Statistics 	www.suicidology.org/portals/14/docs/resources/factsheets/2015/2015datapgsv1.pdf?ver=2017-01-02-220151-870
American Cancer Society	<ul style="list-style-type: none"> It's Easy to Add Fruits and Vegetables to Your Diet 	https://www.cancer.org/healthy/eat-healthy-get-active/eat-healthy/add-fruits-and-veggies-to-your-diet.html
American Cancer Society, Cancer Facts and Figures 2018	<ul style="list-style-type: none"> 2018 Cancer Facts, Figures, and Estimates 	www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2018/cancer-facts-and-figures-2018.pdf
American College of Allergy, Asthma & Immunology, 2016	<ul style="list-style-type: none"> Asthma Facts 	http://acaai.org/news/facts-statistics/asthma
American Diabetes Association, 2015	<ul style="list-style-type: none"> Statistics About Diabetes 	http://www.diabetes.org/diabetes-basics/statistics/?loc=db-slabnav
American Diabetes Association, 2017	<ul style="list-style-type: none"> Risk Factors for Diabetes 	www.diabetes.org
American Heart Association	<ul style="list-style-type: none"> Smoke-Free Living: Benefits and Milestones 	http://www.heart.org/HEARTORG/HealthyLiving/QuitSmoking/YourNon-SmokingLife/Smoke-free-Living-Benefits-Milestones_UCM_322711_Article.jsp#.Wm9bJK6nHIU
Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Behavioral Surveillance Branch, Centers for Disease Control	<ul style="list-style-type: none"> 2010 - 2016 Adult Ohio and U.S. Correlating Statistics 	www.cdc.gov/brfss/index.html
CDC, Division of Cancer Prevention and Control	<ul style="list-style-type: none"> Reduce Risk of Breast Cancer 	www.cdc.gov/cancer/breast/basic_info/prevention.htm
CDC, Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion, Healthy Weight August 29, 2017	<ul style="list-style-type: none"> About Adult BMI 	https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html
CDC, Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion, June 2015	<ul style="list-style-type: none"> Physical Activity Recommendations 	www.cdc.gov/physicalactivity/basics/adults/index.htm
CDC, Division of Oral Health, National Center for Chronic Disease Prevention and Health Promotion, Oral Health, October 23, 2017	<ul style="list-style-type: none"> Adult Oral Health 	https://www.cdc.gov/oralhealth/basics/adult-oral-health/index.html
CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health	<ul style="list-style-type: none"> Smoking and Other Health Risks 	www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/index.htm

Source	Data Used	Website
CDC, National Center for Chronic Disease Prevention and Health Promotion,	<ul style="list-style-type: none"> Prostate Awareness 	https://www.cdc.gov/cancer/dcpc/resources/features/prostatecancer/index.htm
CDC, National Center for Chronic Disease Prevention and Health Promotion, Arthritis	<ul style="list-style-type: none"> Key Public Health Messages 	https://www.cdc.gov/arthritis/about/key-messages.htm
CDC, National Center for Environmental Health, Asthma	<ul style="list-style-type: none"> Common Asthma Triggers 	https://www.cdc.gov/asthma/triggers.html
CDC, National Center for Health Statistics	<ul style="list-style-type: none"> Men's Health 	https://www.cdc.gov/nchs/fastats/mens-health.htm
	<ul style="list-style-type: none"> Contraceptive Use 	www.cdc.gov/nchs/fastats/contraceptive.htm
CDC, National Center for Health Statistics, Mental Health, Depression	<ul style="list-style-type: none"> Mental Health in the U.S. 	https://www.cdc.gov/nchs/fastats/mental-health.htm
CDC, National Center for Injury Prevention and Control, Division of Violence Prevention	<ul style="list-style-type: none"> Understanding Sexual Violence 	https://www.cdc.gov/violenceprevention/pdf/SV-Factsheet.pdf
CDC, Sexually Transmitted Diseases Surveillance, 2017	<ul style="list-style-type: none"> STD's in Adolescents and Young Adults 	https://www.cdc.gov/std/life-stages-populations/adolescents-youngadults.htm
CDC, Wonder	<ul style="list-style-type: none"> Knox County and Ohio Leading Causes of Death, 2013-2015 Knox County and Ohio Mortality Statistics 	https://wonder.cdc.gov/
Community Commons	<ul style="list-style-type: none"> Alcohol Beverage Expenditures Bars and Drinking Establishments Beer, Wine and Liquor Stores Cigarette Expenditures Households with Housing Costs Over 30% of Household Income Insurance Type by Zip Code Opioid Drug Claims Supermarkets, Farmer's Markets and Food Deserts Total Number of Fast Food Restaurants 	www.communitycommons.org/
County Health Rankings, 2017	<ul style="list-style-type: none"> Adult Smoking Prevalence Map Adult Excessive Drinking Prevalence Map Food Environment Map Mental Health 	www.countyhealthrankings.org/app/ohio/2017/overview
Healthy People 2020: U.S. Department of Health & Human Services	<ul style="list-style-type: none"> All Healthy People 2020 Target Data Points 	www.healthypeople.gov/2020/topicsobjectives2020
	<ul style="list-style-type: none"> Social Determinants of Health 	https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health
Office of Health Transformation, Ohio Medicaid Assessment Survey	<ul style="list-style-type: none"> Unmet Dental Needs Usual Source of Care for Adults 	http://grc.osu.edu/omas/

Source	Data Used	Website
Ohio Automated Rx Reporting System (OARRS)	<ul style="list-style-type: none"> Quarterly County Data Annual Opiate and Pain Reliever Doses Per Patient Annual Opiate and Pain Reliever Doses Per Capita 	https://www.ohiopmp.gov/County.aspx
	<ul style="list-style-type: none"> What is OARRS? 	https://www.ohiopmp.gov/About.aspx
Ohio Department of Health, Bureau of Vital Statistics	<ul style="list-style-type: none"> Average Age-Adjusted Unintentional Drug Overdose Death Rate 	http://www.odh.ohio.gov/-/media/ODH/ASSETS/Files/health/injury-prevention/2016-Ohio-Drug-Overdose-Report-FINAL.pdf
Ohio Department of Health, Public Health Data Warehouse	<ul style="list-style-type: none"> Knox County and Ohio Birth Statistics Incidence of Cancer Knox County Mortality 	http://publicapps.odh.ohio.gov/EDW/DataCatalog
Ohio Department of Health, STD Surveillance Program	<ul style="list-style-type: none"> Chlamydia Statistics Gonorrhea Statistics 	www.odh.ohio.gov/odhprograms/stdsurv/std1.aspx
Ohio Department of Job and Family Services, Ohio Labor Market Information, Current Civilian Labor Force Estimates	<ul style="list-style-type: none"> Knox County and Ohio Unemployment Statistics 	http://ohiolmi.com/laus/current.htm
Ohio Department of Public Safety	<ul style="list-style-type: none"> 2016 Knox County and Ohio Crash Facts 	https://services.dps.ohio.gov/Crashstatistics/CrashReports.aspx
Substance Abuse and Mental Health Services Administration	<ul style="list-style-type: none"> Adverse Childhood Experiences 	https://www.samhsa.gov/capt/practicing-effective-prevention/prevention-behavioral-health/adverse-childhood-experiences
The Henry J. Kaiser Family Foundation, The Kaiser Commission on Medicaid and the Uninsured; The Uninsured: A Primer, Key Facts about Health Insurance and the Uninsured in the Era of Health Reform, November 2016	<ul style="list-style-type: none"> How Does Lack of Insurance Affect Health Care 	http://files.kff.org/attachment/Report-The-Uninsured-A%20Primer-Key-Facts-about-Health-Insurance-and-the-Unisured-in-America-in-the-Era-of-Health-Reform
U. S. Census Bureau; American Community Survey	<ul style="list-style-type: none"> American Community Survey 5-year estimates, 2011-2015 	https://factfinder.census.gov/
U. S. Census Bureau; Small Area Income and Poverty Estimates	<ul style="list-style-type: none"> Small Area Income and Poverty Estimates 	www.census.gov/did/www/saipe/

Appendix II: Acronyms and Terms

ACS	American Community Survey
AHS	Access to Health Services , Topic of Healthy People 2020 objectives
Adult	Defined as 19 years of age and older.
Age-Adjusted Mortality Rates	Death rate per 100,000 adjusted for the age distribution of the population.
Adult Binge Drinking	Consumption of five alcoholic beverages or more (for males) or four or more alcoholic beverages (for females) on one occasion.
AOCBC	Arthritis, Osteoporosis, and Chronic Back Conditions , Topic of Healthy People 2020 objectives
BMI	Body Mass Index is defined as the contrasting measurement/relationship of weight to height.
BRFSS	Behavior Risk Factor Surveillance System , an adult survey conducted by the CDC.
CDC	Centers for Disease Control and Prevention .
Current Smoker	Individual who has smoked at least 100 cigarettes in their lifetime and now smokes daily or on some days.
CY	Calendar Year
DRE	Digital Rectal Exam
FY	Fiscal Year
HCNO	Hospital Council of Northwest Ohio
HDS	Heart Disease and Stroke , Topic of Healthy People 2020 objectives
HP 2020	Healthy People 2020 , a comprehensive set of health objectives published by the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services.
Health Indicator	A measure of the health of people in a community, such as cancer mortality rates, rates of obesity, or incidence of cigarette smoking.
High Blood Cholesterol	240 mg/dL and above
High Blood Pressure	Systolic \geq 140 and Diastolic \geq 90
IID	Immunizations and Infectious Diseases , Topic of Healthy People 2020 objectives
IVP	Injury and Violence Prevention , Topic of Healthy People 2020 objectives
MHMD	Mental Health and Mental Disorders , Topic of Healthy People 2020 objectives
N/A	Data is not available.
NVSS	National Vital Statistics System
NWS	Nutrition and Weight Status , Topic of Healthy People 2020 objectives
OARRS	Ohio Automated Prescription (Rx) Reporting System
ODH	Ohio Department of Health
OSHP	Ohio State Highway Patrol

Race/Ethnicity	Census 2010: U.S. Census data consider race and Hispanic origin separately. Census 2010 adhered to the standards of the Office of Management and Budget (OMB), which define Hispanic or Latino as “a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race.” Data are presented as “Hispanic or Latino” and “Not Hispanic or Latino.” Census 2010 reported five race categories including: White, Black or African American, American Indian & Alaska Native, Asian, Native Hawaiian and Other Pacific Islander. Data reported, “White alone” or “Black alone”, means the respondents reported only one race.
SA	Substance Abuse , Topic of Healthy People 2020 objectives
Ohio SHA/SHIP	Ohio State Health Assessment/State Health Improvement Plan
TSE	Testicular Self Exam
TU	Tobacco Use , Topic of Healthy People 2020 objectives
Weapon	Defined in the YRBS as “a weapon such as a gun, knife, or club”
YPLL/65	Years of Potential Life Lost before age 65. Indicator of premature death.
ZCTA	Zip Code Tabulation Area

Appendix III: Methods for Weighting the 2018 Knox County Health Assessment Data

Data from sample surveys have the potential for bias if there are different rates of response for different segments of the population. In other words, some subgroups of the population may be more represented in the completed surveys than they are in the population from which those surveys are sampled. If a sample has 25% of its respondents being male and 75% being female, then the sample is biased towards the views of females (if females respond differently than males). This same phenomenon holds true for any possible characteristic that may alter how an individual responds to the survey items.

In some cases, the procedures of the survey methods may purposefully over-sample a segment of the population in order to gain an appropriate number of responses from that subgroup for appropriate data analysis when investigating them separately (this is often done for minority groups). Whether the over-sampling is done inadvertently or purposefully, the data needs to be weighted so that the proportioned characteristics of the sample accurately reflect the proportioned characteristics of the population. In the 2018 Knox County survey, a weighting was applied prior to the analysis that weighted the survey respondents to reflect the actual distribution of Knox County based on age, sex, race, and income.

Weightings were created for each category within sex (male, female), race (White, non-White), Age (8 different age categories), and income (9 different income categories). The numerical value of the weight for each category was calculated by taking the percent of Knox County within the specific category and dividing that by the percent of the sample within that same specific category. Using sex as an example, the following represents the data from the 2018 Knox County Survey and the 2016 Census estimates from the American Community Survey.

<u>Sex</u>	<u>2018 Knox Survey</u>		<u>2016 Census Estimate</u>		<u>Weight</u>
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	
Male	178	47.46667	29,853	49.03742	1.033092
Female	197	52.53333	31,025	50.96258	0.970100

In this example, it shows that the distribution of sex in the sample nearly matched that of the county. However, there was a slightly larger portion of females in the sample compared to the actual portion in Knox County. The weighting for males was calculated by taking the percent of males in Knox County (based on Census information) (49.03742%) and dividing that by the percent found in the 2018 Knox County sample (47.46667%) [$49.03742/47.46667 =$ weighting of 1.033092 for males]. The same was done for females [$50.96258/52.53333 =$ weighting of 0.970100 for females]. Thus males' responses are weighted heavier by a factor of 1.033092 and females' responses weighted less by a factor of 0.970100.

This same thing was done for each of the 21 specific categories as described above. For example, a respondent who was female, White, in the age category 35-44, and with a household income in the \$50-\$75k category would have an individual weighting of 1.20802 [0.97010 (weight for females) x 1.01937 (weight for White) x 1.20929 (weight for age 35-44) x 1.01017 (weight for income \$25-\$35k)]. Thus, each individual in the 2018 Knox County sample has their own individual weighting based on their combination of age, race, sex, and income. See next page for each specific weighting and the numbers from which they were calculated.

Multiple sets of weightings were created and used in the statistical software package (SPSS 23.0) when calculating frequencies. For analyses done for the entire sample and analyses done based on subgroups other than age, race, sex, or income – the weightings that were calculated based on the product of the four weighting variables (age, race, sex, income) for each individual. When analyses were done comparing groups within one of the four weighting variables (e.g., smoking status by race/ethnicity), that specific variable was not used in the weighting score that was applied in the software package. In the example smoking status by race, the weighting score that was applied during analysis included only age, sex, and income. Thus a total of eight weighting scores for each individual were created and applied depending on the analysis conducted. The weight categories were as follows:

1. **Total weight** (product of 4 weights) – for all analyses that did not separate age, race, sex, or income.
2. **Weight without sex** (product of age, race, and income weights) – used when analyzing by sex.
3. **Weight without age** (product of sex, race, and income weights) – used when analyzing by age.
4. **Weight without race** (product of age, sex, and income weights) – used when analyzing by race.
5. **Weight without income** (product of age, race, and sex weights) – used when analyzing by income.
6. **Weight without sex or age** (product of race and income weights) – used when analyzing by sex and age.
7. **Weight without sex or race** (product of age and income weights) – used when analyzing by sex and race.
8. **Weight without sex or income** (product of age and race weights) – used when analyzing by sex and income.

Category	Knox Sample	%	2016 Census*	%	Weighting Value
Sex:					
Male	178	47.46667	29,853	49.03742	1.033092
Female	197	52.53333	31,025	50.96258	0.970100
Age:					
20 to 34 years	62	16.14583	11,465	25.82033	1.59919
35 to 44 years	48	12.50000	6,712	15.11610	1.20929
45 to 54 years	70	18.22917	7,984	17.98077	0.98637
55 to 59 years	33	8.59375	4,241	9.55116	1.11141
60 to 64 years	29	7.55208	4,063	9.15028	1.21162
65 to 74 years	88	22.91667	5,663	12.75364	0.55652
75 to 84 years	45	11.71875	3,042	6.85089	0.58461
85+ years	9	2.34375	1,233	2.77684	1.18478
Race:					
White	361	93.76623	58,187	95.58282	1.01937
Non-White	24	6.23377	2,689	4.41718	0.70859
Household Income:					
Less than \$10,000	17	4.73538	1,744	7.57306	1.59925
\$10k-\$15k	21	5.84958	1,279	5.55387	0.94945
\$15k-\$25k	35	9.74930	2,587	11.23366	1.15225
\$25k-\$35k	40	11.14206	2,592	11.25537	1.01017
\$35k-\$50	60	16.71309	3,633	15.77576	0.94392
\$50k-\$75k	82	22.84123	4,797	20.83026	0.91196
\$75-\$100k	46	12.81337	3,005	13.04876	1.01837
\$100k-\$150k	38	10.58496	2,268	9.84845	0.93042
\$150k or more	20	5.57103	1,124	4.88080	0.87610

Note: The weighting ratios are calculated by taking the ratio of the proportion of the population of Knox County in each subcategory by the proportion of the sample in the Knox County survey for that same category.

* Knox County population figures taken from the 2016 Census estimates.

Appendix IV: Knox County Sample Demographic Profile*

Variable	2018 Survey Sample	Knox County Census 2012-2016 (5 year estimate)	Ohio Census 2016
Age			
20-29	14.7%	13.4%	13.4%
30-39	18.0%	10.5%	12.3%
40-49	14.4%	12.0%	12.2%
50-59	19.6%	14.0%	14.2%
60 plus	31.2%	23.0%	22.8%
Race/Ethnicity			
White	93.7%	96.5%	81.5%
American Indian and Alaska Native	1.1%	0.1%	0.2%
Black or African American	0.8%	1.0%	12.4%
Hispanic Origin (may be of any race)	0.8%	1.4%	3.6%
Asian	0%	0.4%	2.1%
Other	3.2%	0.1%	0.9%
Marital Status†			
Married Couple	65.3%	51.5%	47.4%
Never been married/member of an unmarried couple	16.1%	28.3%	32.5%
Divorced/Separated	11.0%	12.5%	13.8%
Widowed	7.0%	7.7%	6.3%
Education†			
Less than High School Diploma	7.0%	10.5%	10.0%
High School Diploma	32.5%	41.1%	33.3%
Some college/ College graduate	60.1%	48.5%	56.7%
Income (Families)			
\$14,999 and less	8.4%	9.0%	7.7%
\$15,000 to \$24,999	8.8%	6.3%	6.8%
\$25,000 to \$49,999	22.5%	24.7%	21.2%
\$50,000 to \$74,999	23.7%	23.7%	20.4%
\$75,000 or more	29.2%	36.3%	44.1%

* The percents reported are the actual percent within each category who responded to the survey. The data contained within the report however are based on weighted data (weighted by age, race, sex, and income). Percents may not add to 100% due to missing data (non-responses).

† The Ohio and Knox County Census percentages are slightly different than the percent who responded to the survey. Marital status is calculated for those individuals 15 years and older. Education is calculated for those 25 years and older.

Appendix V: Demographics and Household Information

Knox County Population by Age Groups and Gender U.S. Census 2010

Age	Total	Males	Females
Knox County	60,921	29,751	31,170
0-4 years	3,824	1,982	1,842
1-4 years	3,098	1,599	1,499
< 1 year	726	383	343
1-2 years	1,526	811	715
3-4 years	1,572	788	784
5-9 years	4,077	2,058	2,019
5-6 years	1,552	766	786
7-9 years	2,525	1,292	1,233
10-14 years	4,163	2,141	2,022
10-12 years	2,545	1,350	1,195
13-14 years	1,618	791	827
12-18 years	6,160	3,123	3,037
15-19 years	4,984	2,485	2,499
15-17 years	2,637	1,334	1,303
18-19 years	2,347	1,151	1,196
20-24 years	4,814	2,267	2,547
25-29 years	3,148	1,559	1,589
30-34 years	3,323	1,701	1,622
35-39 years	3,425	1,679	1,746
40-44 years	3,748	1,880	1,868
45-49 years	4,224	2,114	2,110
50-54 years	4,606	2,239	2,367
55-59 years	4,091	1,992	2,099
60-64 years	3,507	1,686	1,821
65-69 years	2,750	1,325	1,425
70-74 years	2,111	1,002	1,109
75-79 years	1,643	749	894
80-84 years	1,234	478	756
85-89 years	828	286	542
90-94 years	331	101	230
95-99 years	84	25	59
100-104 years	6	2	4
105-109 years	0	0	0
110 years & over	0	0	0
Total 85 years and over	1,249	414	835
Total 65 years and over	8,987	3,968	5,019
Total 18 years and over	46,220	22,236	23,984

KNOX COUNTY PROFILE

*General Demographic Characteristics
(Source: U.S. Census Bureau, Census 2016)*

2012-2016 ACS 5-year estimates

Total Population

2016 Total Population	60,878
2012 Total Population	60,791

Largest City-Mount Vernon

2016 Total Population	16,777
2012 Total Population	16,942

Population By Race/Ethnicity

Total Population	60,878	100%
White Alone	58,773	96.5%
Hispanic or Latino (of any race)	855	1.4%
African American	626	1.0%
Asian	222	0.4%
Two or more races	1,101	1.8%
Other	61	0.1%
American Indian and Alaska Native	74	0.1%

Population By Age

Under 5 years	3,632	6.0%
5 to 19 years	12,843	21.0%
20 to 44 years	18,177	29.8%
45 to 64 years	16,288	26.8%
65 years and more	9,938	16.3%
Median age (years)	39.0	

Household By Type

Total Households	23,029	100%
Family Households (families)	15,223	66.1%
With own children <18 years	6,306	27.4%
Married-Couple Family Households	12,022	52.2%
With own children <18 years	4,419	19.2%
Female Householder, No Husband Present	2,216	9.6%
With own children <18 years	1,321	5.7%
Non-family Households	7,806	33.9%
Householder living alone	6,240	27.1%
Householder 65 years and >	2,787	12.1%
Households With Individuals <18 years	7,001	30.4%
Households With Individuals 60 years and >	9,442	41.0%
Average Household Size	2.49 people	
Average Family Size	3.06 people	

General Demographic Characteristics, Continued
(Source: U.S. Census Bureau, Census 2016)

2012-2016 ACS 5-year estimates

Median Value of Owner-Occupied Units	\$135,600
Median Monthly Owner Costs (With Mortgage)	\$1,145
Median Monthly Owner Costs (Not Mortgaged)	\$420
Median Gross Rent for Renter-Occupied Units	\$692
Median Rooms Per Housing Unit	6.1
Total Occupied Housing Units	23,029
No Telephone Service	834
Lacking Complete Kitchen Facilities	526
Lacking Complete Plumbing Facilities	185

Selected Social Characteristics
(Source: U.S. Census Bureau, Census 2016)

2012-2016 ACS 5-year estimates

School Enrollment

Population 3 Years and Over Enrolled In School	15,620	100%
Nursery & Preschool	904	5.8%
Kindergarten	1,000	6.4%
Elementary School (Grades 1-8)	5,914	37.9%
High School (Grades 9-12)	2,999	19.2%
College or Graduate School	4,803	30.7%

Educational Attainment

Population 25 Years and Over	39,526	100%
< 9 th Grade Education	1,491	3.8%
9 th to 12 th Grade, No Diploma	2,633	6.7%
High School Graduate (Includes Equivalency)	16,238	41.1%
Some College, No Degree	7,881	19.9%
Associate Degree	2,630	6.7%
Bachelor's Degree	5,796	14.7%
Graduate Or Professional Degree	2,857	7.2%

Percent High School Graduate or Higher	*(X)	89.6%
Percent Bachelor's Degree or Higher	*(X)	21.9%

*(X) – Not available

Selected Social Characteristics, Continued
(Source: U.S. Census Bureau, Census 2016)
2012-2016 ACS 5-year estimates

Marital Status

Population 15 Years and Over	49,280	100%
Never Married	13,946	28.3%
Now Married, Excluding Separated	25,379	51.5%
Separated	788	1.6%
Widowed	3,795	7.7%
Female	2,865	5.8%
Divorced	5,371	10.9%
Female	2,865	5.8%

Veteran Status

Civilian Veterans 18 years and over	4,348	9.3%
With a Disability	1,256	29.5%

Disability Status of the Civilian Non-institutionalized Population

Total Civilian Noninstitutionalized Population	60,294	100%
With a Disability	8,479	14.1%
Under 18 years	14,097	23.3%
With a Disability	949	9.1%
18 to 64 years	36,657	60.8%
With a Disability	4,261	21.0%
65 Years and Over	9,540	15.8%
With a Disability	3,269	72.6%

Selected Economic Characteristics
(Source: U.S. Census Bureau, Census 2016)
2012-2016 ACS 5-year estimates

Employment Status

Population 16 Years and Over	48,379	100%
In Labor Force	29,751	61.5%
Not In Labor Force	18,628	38.5%
Females 16 Years and Over	24,973	100%
In Labor Force	14,092	56.4%

Population Living With Own Children <6 Years	4,529	100%
All Parents In Family In Labor Force	2,833	62.6%

Class of Worker

Employed Civilian Population 16 Years and Over	27,924	100%
Private Wage and Salary Workers	22,727	81.4%
Government Workers	3,189	11.4%
Self-Employed Workers in Own Not Incorporated Business	1,954	7.0%
Unpaid Family Workers	54	0.2%

Median Earnings

Male, Full-time, Year-Round Workers	\$43,872
Female, Full-time, Year-Round Workers	\$32,605

Selected Economic Characteristics, Continued
(Source: U.S. Census Bureau, Census 2016)
2012-2016 ACS 5-year estimate

Occupations

Employed Civilian Population 16 Years and Over	27,924	100%
Production, Transportation, and Material Moving Occupations	5,220	18.7%
Management, business, science, and art occupations	8,776	31.4%
Sales and Office Occupations	5,724	20.5%
Service Occupations	5,402	19.3%
Natural Resources, Construction, and Maintenance Occupations	2,802	10.0%

Leading Industries

Employed Civilian Population 16 Years and Over	27,924	100%
Manufacturing	4,983	17.8%
Educational, health and social services	7,451	26.7%
Trade (retail and wholesale)	3,235	11.5%
Arts, entertainment, recreation, accommodation, and food services	2,461	8.8%
Professional, scientific, management, administrative, and waste management services	1,480	5.3%
Transportation and warehousing, and utilities	1,188	4.3%
Finance, insurance, real estate and rental and leasing	1,385	5.0%
Other services (except public administration)	1,553	5.6%
Construction	2,142	7.7%
Public administration	980	3.5%
Information	378	1.4%
Agriculture, forestry, fishing and hunting, and mining	688	2.5%

Bureau of Economic Analysis (BEA) Per Capita Personal Income (PCPI) Figures

	Income	Rank of Ohio Counties
BEA Per Capita Personal Income 2016	\$39,641	35 th of 88 counties
BEA Per Capita Personal Income 2015	\$38,859	34 th of 88 counties
BEA Per Capita Personal Income 2014	\$38,135	33 rd of 88 counties
BEA Per Capita Personal Income 2013	\$36,683	36 th of 88 counties
BEA Per Capita Personal Income 2012	\$35,911	35 th of 88 counties

(BEA PCPI figures are greater than Census figures for comparable years due to deductions for retirement, Medicaid, Medicare payments, and the value of food stamps, among other things)

Selected Economic Characteristics, Continued
 (Source: U.S. Census Bureau, Census 2016)

2012-2016 ACS 5-year estimate

Income In 2016

Households	23,029	100%
< \$10,000	1,744	7.6%
\$10,000 to \$14,999	1,279	5.6%
\$15,000 to \$24,999	2,587	11.2%
\$25,000 to \$34,999	2,592	11.3%
\$35,000 to \$49,999	3,633	15.8%
\$50,000 to \$74,999	4,797	20.8%
\$75,000 to \$99,999	3,005	13.0%
\$100,000 to \$149,999	2,268	9.8%
\$150,000 to \$199,999	685	3.0%
\$200,000 or more	439	1.9%

Median Household Income

\$48,619

Income In 2016

Families	15,223	100%
< \$10,000	797	5.2%
\$10,000 to \$14,999	573	3.8%
\$15,000 to \$24,999	965	6.3%
\$25,000 to \$34,999	1,310	8.6%
\$35,000 to \$49,999	2,458	16.1%
\$50,000 to \$74,999	3,605	23.7%
\$75,000 to \$99,999	2,618	17.2%
\$100,000 to \$149,999	1,926	12.7%
\$150,000 to \$199,999	550	3.6%
\$200,000 or more	421	2.8%

Median Household Income (families)

\$58,560

Per Capita Income In 2016

\$23,426

Poverty Status In 2016

	<i>Number Below Poverty Level</i>	<i>% Below Poverty Level</i>
Families	*(X)	11.6%
Individuals	*(X)	15.6%

*(X) – Not available

**Poverty Rates, 5-year averages
2011 to 2015**

Category	Knox	Ohio
Population in poverty	15.3%	15.8%
< 125% FPL (%)	20.7%	20.3%
< 150% FPL (%)	24.1%	24.8%
< 200% FPL (%)	34.7%	33.9%
Population in poverty (2000)	9.5%	10.6%

(Source: The Ohio Poverty Report, Ohio Development Services Agency, February 2017, <https://development.ohio.gov/files/research/P7005.pdf>)

Employment Statistics

Category	Knox County	Ohio
Labor Force	31,500	5,790,400
Employed	30,200	5,540,800
Unemployed	1,300	249,600
Unemployment Rate* in March 2018	4.2	4.3
Unemployment Rate* in February 2017	4.4	4.8
Unemployment Rate* in March 2017	4.6	5.3

**Rate equals unemployment divided by labor force.
(Source: Ohio Department of Job and Family Services, May 2018)*

Estimated Poverty Status in 2016

Age Groups	Number	90% Confidence Interval	Percent	90% Confidence Interval
Knox County				
All ages in poverty	7,294	6,016 to 8,572	12.7%	10.5 to 14.9
Ages 0-17 in poverty	2,378	1,839 to 2,917	17.5%	13.5 to 21.5
Ages 5-17 in families in poverty	1,656	1,265 to 2,047	16.5%	12.6 to 20.4
Median household income	\$53,375	\$51,066 to \$55,684		
Ohio				
All ages in poverty	1,639,636	1,614,177 to 1,665,095	14.5%	14.3 to 14.7
Ages 0-17 in poverty	521,730	506,894 to 536,566	20.4%	19.8 to 21.0
Ages 5-17 in families in poverty	348,713	335,691 to 361,735	18.7%	18.0 to 19.4
Median household income	\$ 52,357	\$ 52,083 to \$ 52,631		
United States				
All ages in poverty	44,268,996	44,022,086 to 44,515,906	14.0%	13.9 to 14.1
Ages 0-17 in poverty	14,115,713	13,976,345 to 14,255,081	19.5%	19.3 to 19.7
Ages 5-17 in families in poverty	9,648,486	9,548,767 to 9,748,205	18.3%	18.1 to 18.5
Median household income	57,617	\$57,502 to \$57,732		

(Source: U.S. Census Bureau, Small Area Income and Poverty Estimates, <http://www.census.gov/did/www/saipe/data/interactive/#>)

Federal Poverty Thresholds in 2017 by Size of Family and Number of Related Children Under 18 Years of Age

Size of Family Unit	No Children	One Child	Two Children	Three Children	Four Children	Five Children
1 Person <65 years	\$12,752					
1 Person 65 and >	\$11,756					
2 people Householder < 65 years	\$16,414	\$16,895				
2 People Householder 65 and >	\$14,816	\$16,831				
3 People	\$19,173	\$19,730	\$19,749			
4 People	\$25,283	\$25,696	\$24,858	\$24,944		
5 People	\$30,490	\$30,933	\$29,986	\$29,253	\$28,805	
6 People	\$35,069	\$35,208	\$34,482	\$33,787	\$32,753	\$32,140
7 People	\$40,351	\$40,603	\$39,734	\$39,129	\$38,001	\$36,685
8 People	\$45,129	\$45,528	\$44,708	\$43,990	\$42,971	\$41,678
9 People or >	\$54,287	\$54,550	\$53,825	\$53,216	\$52,216	\$50,840

(Source: U. S. Census Bureau, Poverty Thresholds 2017)

Appendix VI: 2018 County Health Rankings

	Knox County	Ohio	U.S.
Health Outcomes			
Premature death. Years of potential life lost before age 75 per 100,000 population (age-adjusted) (2012-2014)	6,900	7,700	6,700
Overall health. Percentage of adults reporting fair or poor health (age-adjusted) (2015)	17%	17%	16%
Physical health. Average number of physically unhealthy days reported in past 30 days (age-adjusted) (2015)	4.0	4.0	3.7
Mental health. Average number of mentally unhealthy days reported in past 30 days (age-adjusted) (2015)	4.2	4.3	3.8
Maternal and infant health. Percentage of live births with low birthweight (< 2500 grams) (2008-2014)	7%	9%	8%
Health Behaviors			
Tobacco. Percentage of adults who are current smokers (2015)	20%	23%	17%
Obesity. Percentage of adults that report a BMI of 30 or more (2013)	27%	32%	28%
Food environment. Index of factors that contribute to a healthy food environment, 0 (worst) to 10 (best) (2014)	7.8	6.6	7.7
Physical activity. Percentage of adults aged 20 and over reporting no leisure-time physical activity (2013)	27%	26%	23%
Active living environment. Percentage of population with adequate access to locations for physical activity (2010 & 2014)	66%	85%	83%
Drug and alcohol abuse. Percentage of adults reporting binge or heavy drinking (2015)	18%	19%	18%
Drug and alcohol abuse and injury. Percentage of driving deaths with alcohol involvement (2011-2015)	30%	34%	29%
Infectious disease. Number of newly diagnosed chlamydia cases per 100,000 population (2014)	224.0	489.3	478.8
Sexual and reproductive health. Teen birth rate per 1,000 female population, ages 15-19 (2008-2014)	23	28	27

(Source: 2017 County Health Rankings for Knox County, Ohio and U.S. data)
 N/A – Data is not available

	Knox County	Ohio	U.S
Clinical Care			
Coverage and affordability. Percentage of population under age 65 without health insurance (2014)	9%	8%	11%
Access to health care/medical care. Ratio of population to primary care physicians (2014)	2540:1	1310:1	1,320:1
Access to dental care. Ratio of population to dentists (2015)	2640:1	1480:1	1,660:1
Access to behavioral health care. Ratio of population to mental health providers (2016)	840:1	560:1	470:1
Hospital utilization. Number of hospital stays for ambulatory-care sensitive conditions per 1,000 Medicare enrollees (2014)	52	57	49
Diabetes. Percentage of diabetic Medicare enrollees ages 65-75 that receive HbA1c monitoring (2014)	83%	85%	85%
Cancer. Percentage of female Medicare enrollees ages 67-69 that receive mammography screening (2014)	58%	61%	63%
Social and Economic Environment			
Education. Percentage of ninth-grade cohort that graduates in four years (2014-2015)	89%	81%	83%
Education. Percentage of adults ages 25-44 years with some post-secondary education (2011-2015)	55%	65%	65%
Employment, poverty, and income. Percentage of population ages 16 and older unemployed but seeking work (2015)	4.5%	4.9%	4.9%
Employment, poverty, and income. Percentage of children under age 18 in poverty (2015)	18%	20%	20%
Employment, poverty, and income. Ratio of household income at the 80th percentile to income at the 20th percentile (2011-2015)	4.2	4.8	5.0
Family and social support. Percentage of children that live in a household headed by single parent (2011-2015)	28%	36%	34%
Family and social support. Number of membership associations per 10,000 population (2015)	14.4	11.3	9.3
Violence. Number of reported violent crime offenses per 100,000 population (2012-2014)	86	290	380
Injury. Number of deaths due to injury per 100,000 population (2011-2015)	65	75	65

(Source: 2017 County Health Rankings for Knox County, Ohio and U.S. data)

N/A – Data is not available

	Knox County	Ohio	U.S.
Physical Environment			
Air, water, and toxic substances. Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5) (2012)	11.2	11.3	8.7
Air, water, and toxic substances. Indicator of the presence of health-related drinking water violations. 1 - indicates the presence of a violation, 0 - indicates no violation (FY 2013-2014)	No	N/A	N/A
Housing. Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, or lack of kitchen or plumbing facilities (2009-2013)	15%	15%	19%
Transportation. Percentage of the workforce that drives alone to work (2011-2015)	78%	83%	76%
Transportation. Among workers who commute in their car alone, the percentage that commute more than 30 minutes (2011-2015)	33%	30%	35%

(Source: 2017 County Health Rankings for Knox County, Ohio and U.S. data)

N/A – Data is not available

Appendix VII: 2017 Knox County PRIDE Survey Data

In 2017, there were 1,811 (6th, 8th, 10th, and 12th grade) students from Knox County schools who took the PRIDE Survey. Between 2015 and 2017, alcohol and drug use significantly decreased. Risk factors decreased and protecting factors increased. Nine out of ten students reported not using any drugs in the past year. Seven out of ten students did not report adverse behavior and did not know where/how to access alcohol, tobacco, and other drugs (ATOD).

From 2015 to 2017, tobacco use decreased by 5.43%, alcohol decreased by 5.08%, and marijuana decreased by 4.64%.

Substance	Percentage
Percentages of Students Who Reported Use in the Past Year	
Alcohol	27.32%
Tobacco	15.37%
Marijuana	12.27%
Prescription drugs	3.50%
Hallucinogens	2.75%
Cocaine	2.0%
Inhalants	1.8%
Steroids	1.2%
Over-the-counter (OTC) Drugs	1.1%
Heroin	<1.0%
Meth	<1.0%
Ecstasy	<1.0%
A Students Alcohol, Tobacco, and other Drugs (ATOD) Use Increases When Friends' Use Increases	
<i>Substance</i>	<i>Change in use</i>
Prescription Drugs	Increase
Marijuana	Increase
Alcohol	Increase
Cigarettes	Increase
E-cigarettes	Increase
A Students ATOD Use Increases When General Access Increases	
<i>Substance</i>	<i>Change in use</i>
Prescription Drugs	Increase
Marijuana	Increase
Alcohol	Increase
Cigarettes	Increase
E-cigarettes	Increase
A Students ATOD Use Increases When Parents Supply Alcohol	
<i>Substance</i>	<i>Change in use</i>
OTC Drugs	Increase
Alcohol	Increase
A Students ATOD Use Decreases When Perceptions of Friend Disapproval Increases	
<i>Substance</i>	<i>Change in use</i>
Marijuana	Decrease
Alcohol	Decrease
Cigarettes	Decrease
E-cigarettes	Decrease

(Source: Measurement Resources Company. (2018). Addressing Risk and Protective Factors to Reduce ATOD Use. Analysis of Pride Survey 2017-2018 Data for Knox County Schools, March 2018)

A Students ATOD Use Decreases When Perceptions of Harm Increases	
<i>Substance</i>	<i>Change in use</i>
Cigarettes	Decrease
E-cigarettes	Decrease
A Students ATOD Use Decreases When Parental Discipline Increases	
<i>Substance</i>	<i>Change in use</i>
Marijuana	Decrease
OTC Drugs	Decrease
A Students ATOD Use Decreases When a Student Is More Involved in Sports or Teachers Talked About Drugs/Alcohol	
<i>Substance</i>	<i>Change in use</i>
Cigarettes	Decrease
E-cigarettes	Decrease
A Students ATOD Use Decreases When Hours of Sleep on School Night Increases	
<i>Substance</i>	<i>Change in use</i>
Alcohol	Decrease
Percentage of Students Who Reported Favorable Factors to Prevent Use	
Do not know how/where to get ATOD	77%
Friends disapprove of ATOD use	60%
Play sports	58%
Friends are not using	57%
Risk of harm ATOD use	55%
Get eight or more hours of sleep	47%

(Source: Measurement Resources Company. (2018). Addressing Risk and Protective Factors to Reduce ATOD Use. Analysis of Pride Survey 2017-2018 Data for Knox County Schools, March 2018)

Appendix VIII: Knox County Focus Group Data

Knox County Health Department conducted a qualitative study from February to March 2018, to explore youth's perceptions of the most critical issues impacting their health, as well as, the perceptions of local business leaders on how health related issues affect the workforce in Knox County. Three teen focus groups were held at Central Ohio Technical College with a purposive sample of 22 students from Knox County's Teen Advisory Group, including three quest participants, ages 15-18. The business leader focus group was held at Knox County Chamber of Commerce and included 8 adults.

Key Findings from the Teen Focus Group

1. What do you think are the biggest health concerns in Knox County?
 - Obesity
 - Fast food is easily accessible
 - Drug/alcohol use
 - Mental health caused by the large amount of pressure placed on teens
2. How prevalent is drug use among local teens?
 - Alcohol and tobacco are extremely prevalent
 - There is an attitude of normality among their peers that *"everyone does it"*
3. What are some health issues you relate directly to substance use?
 - Diminished performance whether it's in school or life in general, *"people just stop caring about anything"*
 - Mental health
4. If you know about possible health issues, why do teens use?
 - *"To fit in."* Peer pressure to use begins as early as freshman year in high school
 - There is so much pressure placed on teens, that many turn to using as a coping mechanism
 - Observing family members use and not seeing any consequences as a result
5. How easy is it to get drugs, tobacco, or alcohol?
 - Very easy
 - Many places do not ask for proof of ID
 - Obtain from an older sibling or from a graduate
 - Some students indicated they have either witnessed a drug deal or know where they happen routinely
6. How do we evoke change?
 - More education through other formats, besides through PowerPoints
 - Improve *"Lack of forethought"* or *"not understanding consequences"*
 - School-based educational programs/assemblies that are not mandated, but incentives offered to attend them
 - Successful peer-to-peer relationships

Key Findings from the Business Leaders Focus Group

1. What do you think are the biggest health concerns in Knox County?
 - Affordability
 - Obesity
 - Mental health
 - Smoking
 - Addiction - we can't find employees that can pass a drug screen, addiction also negatively affects the group health plan and the insurance premiums from a business standpoint
2. What are your thoughts on access to care and utilization?
 - Employees have access to care, but do not utilize it due to high costs, specifically cost of deductibles
3. What physical or mental conditions effect the workplace?
 - Depression
 - Anxiety
 - Physical ailments that leave employees frequently ill
4. What causes stress outside the workplace? Do you see its effects?
 - Home environment of the employee, including drug and/or alcohol use, stressful situations
 - Surrounding environments are seen as the contributing factors to depression and anxiety in the workplace
 - Physical ailments of family members
5. How do we increase interest/incentivize the use of health care?
 - Healthy living education must be promoted from an early age not just in schools, but through healthy family and social environments
 - Interventions should be geared towards educating the public on what resources are currently available

(Source: Kenyon College, Gambier, Ohio, Spring 2018: Global Public Health Research Methods. Focus group analysis.)

Appendix IX: Knox County Ohio Medicaid Assessment Survey

The Ohio Medicaid Assessment Survey (OMAS) is a telephone survey that samples landlines and cell phones of Ohio residents. The survey examines insurance status, access to the health system, health status, and demographics of Ohio's Medicaid, Medicaid eligible, and non-Medicaid populations among adults and children. Knox County data from 2015 OMAS and 2017 OMAS were combined into a data set and used to assess the health status, unmet need, barriers to health care, and utilization of services specific to Knox County residents.

Health Status of Knox County Medicaid Recipients

- 18.9% of Knox County adults reported their health as being excellent, 36.0% reported health as being very good, 29.0% reported their health as good, 12.6% reported their health as fair, and 3.5% reported their health as poor.
- 56.2% reported their child's health as being excellent, 33.6% reported their child's health as being very good, 9.6% reported their child's health as good, and 0.6% reported their child's health as fair, no caregiver reported their child's health as poor.
- 95.0% reported not having mental health conditions hinder them from their daily activities and 5.0% reported that mental health conditions did hinder them from daily activities.
- 7.4% of adults reported they needed counseling in the past 6 months and 92.6% reported not needing counseling in the past 6 months.
- 4.0% of adults reported having congestive heart failure.
- 14.0% reported having diabetes.
- 35.0% of adults reported body mass index (BMIs) between 25 and 30. 33.4% reported BMIs greater than 30.
- 22.7% reported being current smokers.
- 58.9% of caregivers reported their children were underweight or normal weight, 15.1% reported their children were overweight, and 26.1% reported their children were obese.
- 24.0% of caregivers reported their child drank one glass of soda per day.

Barriers to Health Care Access among Knox County Residents

- 92.7% of insured adults had a usual source of healthcare, while only 59.6% of uninsured adults had a usual source of healthcare.
- Knox County residents reported using the following services most frequently: doctor's office (77.8%), urgent care (12.2%), and hospital ER (3.7%).
- In Knox County, the highest uninsured rates reported were for residents living at 101%-206% FPL at 10.9%, followed by <100% FPL at 9.5%, and >206% at 4.6%.

Utilization of Health Care Services in Knox County

- Vision was the least sought form of care at 50.7%, followed by dental care at 63.2%, check-ups at 75.8%, and medical visits at 87.8%.
- 91.6% of children had a checkup within the past year, 86.8% had dental care, 86.2% had medical visits, and 56.8% had vision appointments.
- The largest gap in care was vision.
- There were no significant health care utilization differences between genders.

Unmet Needs in Knox County

- Unmet health care needs were nearly identical for both men and women, except mental health care, which was higher for males at 4.0% compared to females at 1.0%.
- Unmet health care needs were also similar by age, except for unmet dental needs.

Percentage of Unmet Healthcare Needs in Knox County by Age (2015 and 2017)

Type of Need	Children (Ages 0-18)	Young Working Adults (Ages 19-34)	Older Working Adults (Ages 35-64)	Older Adults (Ages 65+)
Unmet dental care	4%	9%	11%	3%
Unmet vision care or eyeglasses	NA	8%	10%	10%
Unmet mental healthcare or counseling	NA	3%	3%	1%
Other unmet healthcare need	NA	5%	10%	6%

N/A- data not available

(Source: Kenyon College, Gambier, Ohio, Spring 2018: Global Public Health Research Methods. Ohio Medicaid Assessment Survey analysis)

Percentage of Unmet Healthcare Needs in Knox County by Federal Poverty Level (2015 and 2017)

Type of Need	≤100% FPL	100-206% FPL	≥206% FPL
Unmet dental care	17%	12%	5%
Unmet vision care or eyeglasses	20%	11%	6%
Unmet mental healthcare or counseling	3%	3%	2%
Other unmet healthcare need	13%	7%	7%

(Source: Kenyon College, Gambier, Ohio, Spring 2018: Global Public Health Research Methods. Ohio Medicaid Assessment Survey analysis)

**Percentage of Unmet Healthcare Needs in Knox County by
Employment Status (2015 and 2017)**

Type of Need	Employed	Unemployed
Unmet dental care	7%	9%
Unmet vision care or eyeglasses	10%	9%
Unmet mental healthcare or counseling	3%	3%
Other unmet healthcare need	6%	9%

(Source: Kenyon College, Gambier, Ohio, Spring 2018: Global Public Health Research Methods. Ohio Medicaid Assessment Survey analysis)

**Percentage of Unmet Healthcare Needs in Knox County by
Insurance Type (2015 and 2017)**

Type of Need	Medicare/ Medicaid	Employer	Uninsured
Unmet dental care	12%	5%	23%
Unmet vision care or eyeglasses	15%	5%	9%
Unmet mental healthcare or counseling	2%	2%	6%
Other unmet healthcare need	7%	5%	19%

(Source: Kenyon College, Gambier, Ohio, Spring 2018: Global Public Health Research Methods. Ohio Medicaid Assessment Survey analysis)



Photo by Sam Miller



Released with gratitude for our community and its efforts to improve the lives of all Knox County residents