

Kentucky Department
for Public Health

State Health Assessment

2023

Our mission is to improve the health
and safety of people in Kentucky through
prevention, promotion and protection.



Kentucky Public Health

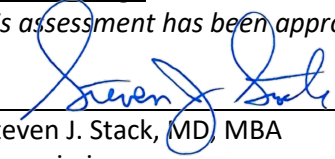
Prevent. Promote. Protect.



Adopted: 08/31/2023

Signature Page

This assessment has been approved and adopted by the Kentucky Department for Public Health



Steven J. Stack, MD, MBA
Commissioner

8/31/2023

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Section 1: Executive Summary



Readers Guide

Data



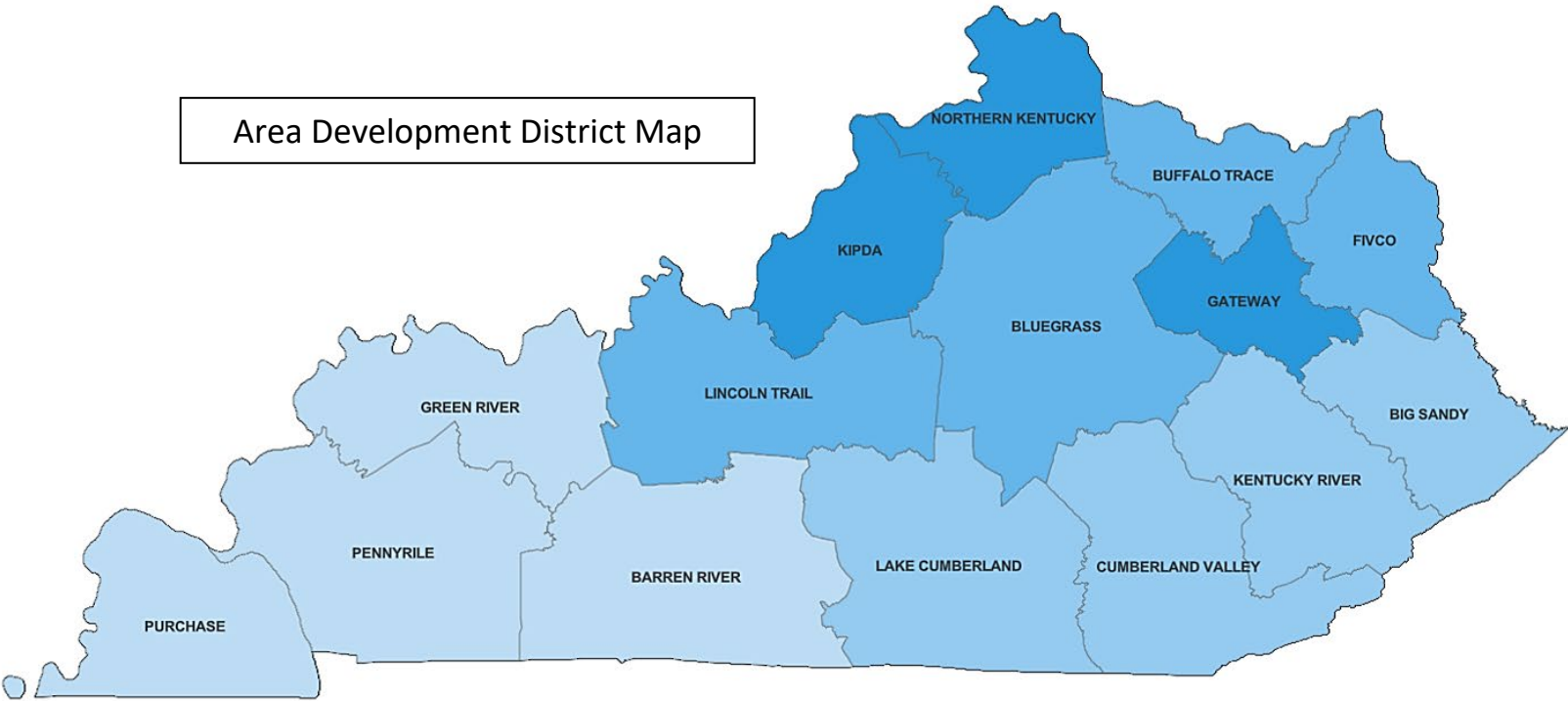
The Kentucky Department for Public Health (KDPH) last compiled a comprehensive Kentucky State Health Assessment (SHA) in 2017. The **2023 Kentucky State Health Assessment** serves as a report of Kentucky's most recently reported data. Statistics were placed into public health themes with the following key points highlighted: Demographics, Healthcare Access/Coverage, Health Behavior Factors, Health Outcomes, Maternal and Child Health and Social Determinants of Health. Ultimately, the report will be used to inform the State Health Improvement Plan.

The data referenced throughout this document ranges from 2016-2021 and includes primary and secondary data. Primary data sources include the Kentucky Behavioral Risk Factor Surveillance (KYBRFS) Program, Kentucky Office of Vital Statistics, Neonatal Abstinence Syndrome (NAS) Registry, Maternal and Child Health (MCH) Case Management System, Kentucky Injury and Prevention and Research Center (KIPRC), Kentucky Cancer Registry (KCR) and Youth Risk Behavioral Surveillance Survey (YRBS). Secondary data used are from the U.S. Census for collecting demographics such as population and growth, gender distribution, population segmented by age and population segmented by race. Other secondary sources are the 2022 America's Health Rankings Annual Report from the United Health Foundation and Acutrans.

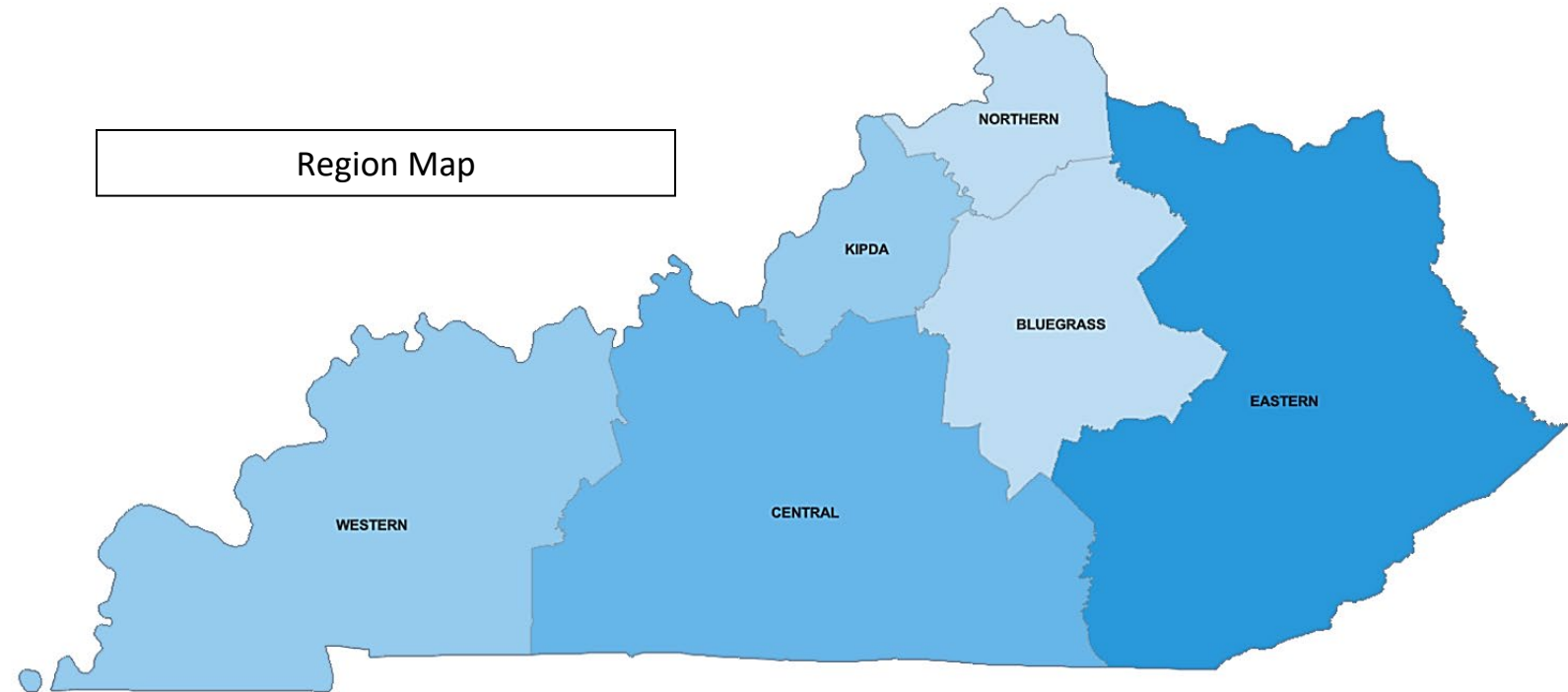
Data drives the SHA process. "Data-driven" means that an organization utilizes data to guide decision-making. There are quantitative and qualitative data in this report. The quantitative data answers "what" and "how much" with the intent to discover facts. Qualitative data is more about exploring "how" and "why": seeking data from various audiences to gain a deeper understanding of experiences and helping to explain reasons, situations or perspectives that affect quantitative data.

When possible, the KDPH chose to reference existing data and reports created by organizations and partners rather than duplicate data collection and analysis. When data is presented, the source and whether it is a primary or secondary source is noted. Data is presented in various ways, including narrative text, maps, charts, graphs and tables for a variety of visualization options. The Area Development District (ADD) maps illustrate the 15 different districts [Barren River, Big Sandy, Bluegrass, Buffalo Trace, Cumberland Valley, Five Counties (FIVCO), Gateway, Green River, Kentucky River, Kentuckiana Regional Planning and Development Agency (KIPDA), Lake Cumberland, Lincoln Trail, Northern Kentucky, Pennyrile and Purchase]. The region maps consist of 6 different areas (Western, Central, KIPDA, Northern, Eastern and Bluegrass Run) representing multi-county planning districts.

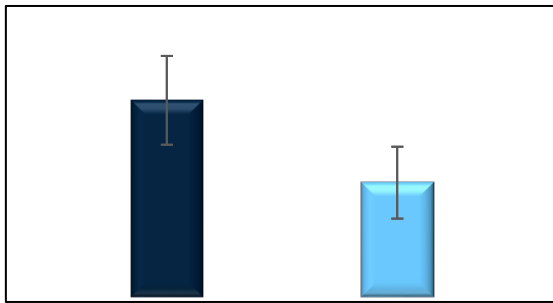
Area Development District Map



Region Map



Confidence intervals describe the amount of uncertainty associated with a sampling method. Confidence intervals are usually reported to help explain how reliable or precise a result is. (Source: https://www.nlm.nih.gov/nichsr/stats_tutorial/section2/mod2_confidence.html). They are frequently reported in scientific literature and indicate how close research results are to reality. The confidence interval uses the sample to estimate the interval of probable values of the population and the parameters of the population. For example, suppose a study is 95% reliable with a confidence interval of 47-53. In that case, if researchers did the same study repeatedly with samples of the whole population, they would get results between 47 and 53 exactly 95% of the time. The reliability in this example refers to the consistency of the measurement or the ability to repeat it. Poor reliability is more likely with a small population or if the health event studied does not happen often or at regular times. In the document, confidence intervals are displayed as error bars on graphs. Note that not all data depicts a confidence interval. Example of Confidence interval below:



Committee Process



Internal Process

Beginning in October 2022, a small group of the KDPH staff came together to start the planning process for the SHA. Most staff had participated in the 2017 SHA process. Additional staff were brought onto the SHA Committee based on their access to data and expertise on the subject matter, and it grew to more than 15 regularly attending members, with other subject matter experts brought in ad hoc. Over the next several months, meetings were held virtually on at least a monthly basis. During these meetings, topics discussed were what data to include from the previous SHA, what data should not be included in the update and what new data should be added. Additionally we discussed additional staff and external organizations that should be brought to the table; availability of data and calculation changes from previous year data sets, layout of the document, graphical presentation and alignment with the KDPH’s brand policy guidelines, etc. The KDPH staff compiled the document with updated, analyzed data. Epidemiologists calculated statistics and made charts to represent the data visually.



External Process

External partners were invited to join the SHA committee. The KDPH included organizations that represent populations disproportionately affected by poorer health outcomes. The KDPH has partnerships with countless organizations that fit into this category with the hope of expanding participation and the amount of data from external partners in the future. For this document and timelines, a few organizations were selected to provide an external perspective. During the SHA process the KDPH collaborated with Foundation for a Healthy Kentucky, Kentuckiana Health

Collaborative, the Department of Aging and Independent Living and Kentucky Voices for Health to obtain data.



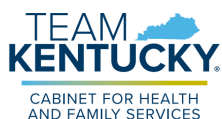
FOUNDATION FOR A
**HEALTHY
KENTUCKY**

The [Foundation for a Healthy Kentucky](#) (FHK) is a nonprofit, nonpartisan organization funded by an endowment that works to make Kentuckians healthier. Their mission is to address the unmet health needs of Kentuckians by developing and influencing policy, improving access to care, reducing health risks and disparities and promoting health equity. The FHK met with the KDPH in the fall of 2022 to discuss the results of their community and partners’ survey of 700 participants and their [strategic plan](#) for 2023-2027. The top response received to “What do you believe has an impact on your health and/or community?” was affordability of healthcare and insurance coverage. They also found that 78% of respondents answered, “It is very important that those working on health, healthcare and health policy focus on health equity in their work.” The two focus areas in their strategic plan 2023-2027 are access to healthcare and children’s health.



**Kentuckiana
Health Collaborative**

The [Kentuckiana Health Collaborative](#) (KHC) is a non-profit coalition of businesses and healthcare stakeholders working to solve the complex health problems that face local communities to improve the health status and healthcare delivery in Greater Louisville and Kentucky. The KHC met with the KDPH in the spring of 2023 to discuss their mission and focus areas and contribute to the conversation. The mission of the KHC is to work collaboratively with healthcare purchasers and stakeholders to build healthier communities through high quality, affordable and equitable healthcare across Kentucky and Southern Indiana. They focus on three main strategies: improve healthcare quality, make healthcare more affordable and build healthier communities. To access the quantitative data reports, go to <https://khcollaborative.org/programs/community-measurement/>.



CABINET FOR HEALTH
AND FAMILY SERVICES

**Department for Aging
and Independent Living
502-564-6930**

The [Department of Aging and Independent Living](#) (DAIL), a state agency within the Cabinet for Health and Family Services, oversees services for Kentucky elders and individuals with disabilities. The mission of the DAIL is to promote the welfare, dignity and independence of older adults, individuals with physical disabilities and adults in need of a guardian. The KDPH met with the DAIL in the spring of 2023 to discuss the Office of Dementia Services (ODS) within the DAIL, which provides resources and support on Alzheimer’s Disease and Dementia Related Disorders (ADRD). The DAIL shared Alzheimer’s data for this state health assessment.



The [Kentucky Voices for Health](#) (KVH) met with the KDPH in the spring of 2023 to discuss their mission and highlight stories from fellow Kentuckians. KVH believes every Kentuckian should have the opportunity to live a healthy life and contribute to the health of their communities. As a 501(c) (3) nonprofit and nonpartisan coalition, the KVH brings together individuals, advocates, community organizations, state agencies and policymakers to address the underlying causes of poor health by connecting Kentuckians with opportunities to make change through policy advocacy. The KVH focuses on health equity and social determinants of health (SDOH). The KVH shared some of their story highlights during a SHA committee meeting. Countless other stories can be found on the KVH’s website.

Participating Partners			
Organization	How did we collaborate?	Organization representing sectors other than governmental public health? (Yes or No)	Organization representing populations disproportionately affected? (Yes or No)
Foundation for a Health Kentucky	Met with Chief of Staff, Quality Improvement Coordinator and Division Director to discuss survey results and their strategic plan in November 2022. FHK emailed the survey with Strategic Plan in January 2023.	Yes	Yes
Kentuckiana Health Collaborative	Attended March 6 th , 2023, SHA Committee meeting. Contributed to discussion.	Yes	Yes
DAIL	Attended April 17 th , 2023, SHA Committee meeting and shared Alzheimer's Data to include in the SHA.	No	Yes
Kentucky Voices for Health	Attended April 17 th , 2023, SHA Committee meeting. Shared community stories to include in the SHA.	Yes	Yes

Kentucky Health Highlights



The prevalence of Kentuckians without healthcare insurance at 4.3% is below the national average of 7.1%.

Cancer mortality rates for all sites show a steady decline from 2015-2019 (195 to 171.9 rates per 100,000).



Alcohol consumption is lower than the U.S. norm.

High school graduation is 90.6%, ranking 4th in the country.



Screening for lung cancer with annual low-dose CT scans among those at high risk: In Kentucky, 13% of those at high risk were screened, which was significantly higher than the national rate of 6%. It ranks 4th among all states, placing it in the top tier.

Kentucky had a lower percentage (13%) of severe housing problems in years 2015-2019 than the US (17%).



Kentucky has a higher percentage of people with diabetes than the U.S.

A higher percentage of Kentucky adults are categorized as having fair or poor health when compared to the U.S. median.



Poor mental health days were higher among Kentuckians when compared to the U.S. median.

Kentuckians continue to have higher smoking habits than the U.S. median. However, smoking rates have declined from 2016 (24.5%) to 2021 (19.6%). The rate of women who smoke during pregnancy is three times higher in Kentucky than the U.S. median.



Kentucky (19.4) reported a much higher Neonatal Abstinence Syndrome (NAS) rate per 1,000 births than the U.S.

Kentucky has a higher percentage of children in poverty than the U.S. (21.0% vs. 17%).



Section 2: Data

Demographics

According to the official 2020 Census, Kentucky’s population was 4,505,836, which ranks 26th among the states. Kentucky’s growth since the 2010 Census equaled 3.8 percent, less than the overall U.S. population growth of 7.4 percent for the same period. Kentucky has 120 counties and over 350 incorporated cities (population of 500 or more), including nine Metropolitan Planning Organizations (200,000 or greater population). Kentucky’s population of the percentage of females and males in both Kentucky and the United States is comparable. Comparing Kentucky’s population by age categories to the U.S. population, there are only slight variations. Kentucky has less diversity by race/ethnicity than the U.S. population, with 86.9% white, 8.7% Black, and 4.3% Hispanic or Latino comprising the largest categories in the population.

The median household income for Kentuckians (\$55,454) is \$13,567 less than the U.S. median (\$69,021). Kentuckians have a higher percentage of persons in poverty (16.5% vs. 11.6%) compared to the U.S. Poverty as defined by the U.S. Census Bureau based on a set of money income thresholds that vary by family size and composition. Suppose the total income of a family is less than the poverty threshold set by the federal government. In that case, the family is considered in poverty. The unemployment percentage is lower in Kentucky (4.7%) than in the U.S. (5.4%). Kentucky has a lower rate of persons age 25+ years who are high school graduates or who have a bachelor’s degree than the U.S.

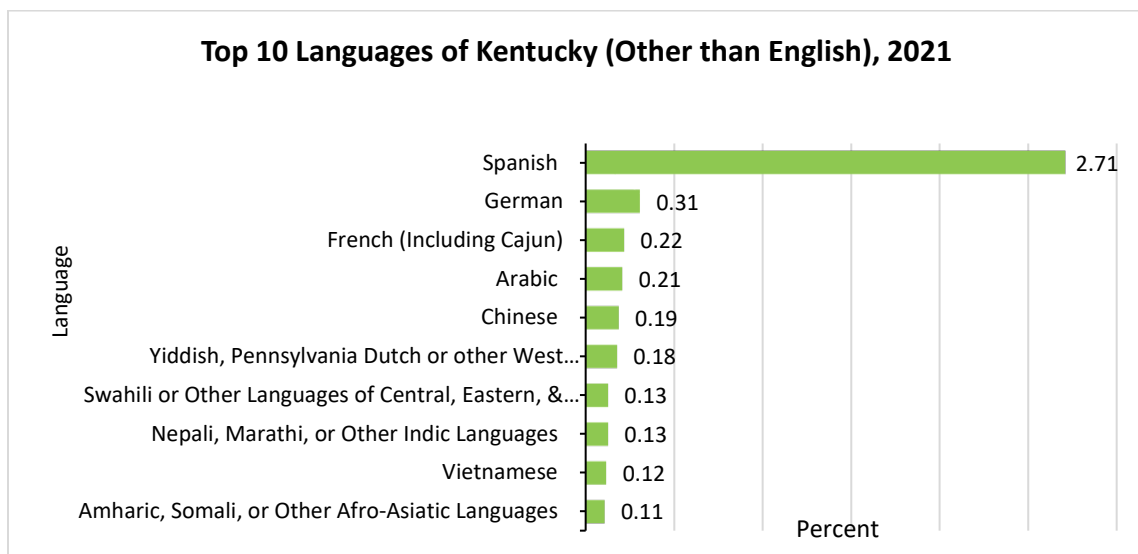
Computer and internet usage in Kentucky has fewer households with computer and broadband internet subscriptions than the U.S. Kentuckians have a higher percentage than the U.S. of those under the age of 65 years with a disability. A higher percentage of the workforce drive alone to work among Kentuckians (80%) than in the U.S. (73%). Among workers who have a long commute in their car alone, the percentage of commuting more than 30 minutes is lower in Kentucky than in the U.S. (30% vs. 37%). Kentucky also has a shorter average travel time to work than the U.S. (~24 minutes vs. ~27 minutes). In Kentucky, 67.8% of housing units were owner-occupied compared to the U.S. (64.6%).

Demographics			
		Kentucky	U.S. Population
Population and Growth			
Census Year*	2020 Census	4,505,836	331,449,281
	2010 Census	4,339,367	308,745,538
	% Growth	3.80%	7.40%
Comparison of Gender Distribution			
Gender*	Male	49.70%	49.60%
	Female	50.30%	50.40%

Demographics			
		Kentucky	U.S. Population
Population Segmented by Age			
Age*	Under 5	6.00%	5.80%
	5-9 years	6.20%	6.10%
	10 – 19 years	13.10%	13.00%
	20 – 44 years	32.00%	33.10%
	45 – 64 years	26.00%	25.40%
	Over 65 years	16.70%	16.60%
Population Segmented by Race/Ethnicity			
Race/Ethnicity*	white	86.90%	75.50%
	Black	8.70%	13.60%
	American Indian or Alaska Native alone	0.30%	1.30%
	Asian alone	1.80%	6.30%
	Native Hawaiian and Other Pacific Islander alone	0.10%	0.30%
	Two or more races	2.30%	3.00%
	Hispanic or Latino	4.30%	19.10%
	white alone, not Hispanic or Latino	83.20%	58.90%
Comparison of Median Household Income (in 2021 Dollars), 2017-2021			
Income [^]	Median household income	\$55,454	\$69,021
Comparison of Persons in Poverty, Percent			
Poverty [`]	Persons in poverty	16.50%	11.60%
Unemployment, Percent			
Unemployment [~]	Unemployed persons	4.70%	5.40%
Education, Percent of Persons Age 25+ Years, 2017-2021[^]			
Education [^]	High school graduate or higher	87.70%	88.90%
	Bachelor's degree or higher	25.70%	33.70%

Demographics			
		Kentucky	U.S. Population
Computer and Internet use, percent, 2017-2021			
<i>Computer and Internet Use</i> [^]	Households with a computer	90.20%	93.10%
	Households with a broadband internet subscription	83.60%	87.00%
With a Disability, Under Age 65 Years, Percent, 2017-2021			
<i>Disability</i> [^]	< Age 65 – disability	13.20%	8.70%
Driving Alone, percent, 2017-2021[~]			
<i>Driving Alone</i> ^{^^}	Driving alone to work	80.00%	73.00%
	Long commute – driving alone	30.00%	37.00%
Mean Travel Time to Work (Minutes), Workers Age 16+ Years, 2017-2021			
<i>Travel Time to Work</i> ^{``}	Mean travel time – minutes	23.7	26.8
Homeownership, Percent, 2017-2021			
<i>Homeownership</i> ^{^^}	People owning homes	67.80%	64.60%

Notes: * Denotes secondary source U.S. Census Data for 2020. ^ Denotes secondary sources U.S. Census Data and County Health Rankings for 2017-2021. ~ Denotes secondary source County Health Rankings, 2021. ` Denotes secondary sources U.S. Census Data, 2021 estimates and County Health Rankings. ^^ Denotes secondary source County Health Rankings for 2017-2021. `` Denotes secondary source U.S. Census Data for 2017-2021.



*Secondary Source: Acutrans, Inc., 2021.

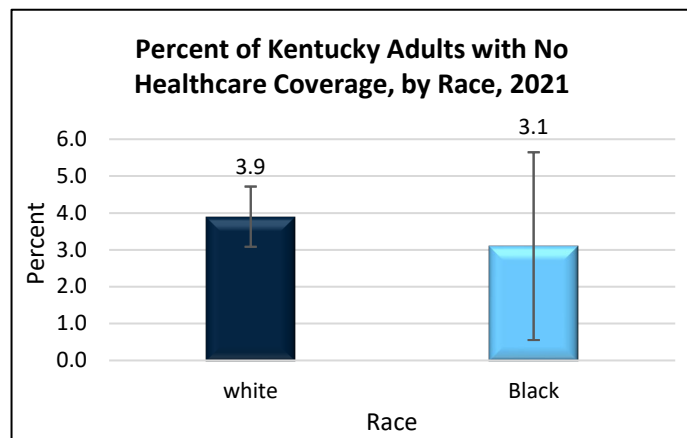
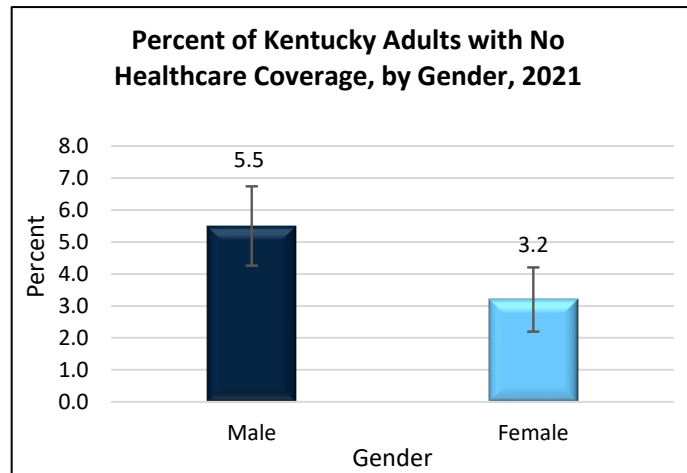
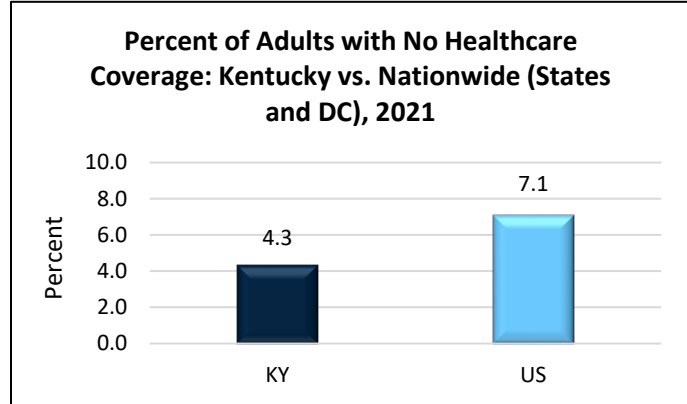
Healthcare Access/Coverage

Question: Do you have any kind of healthcare coverage, including health insurance, prepaid plans such as HMOs, or governmental plans such as Medicare?

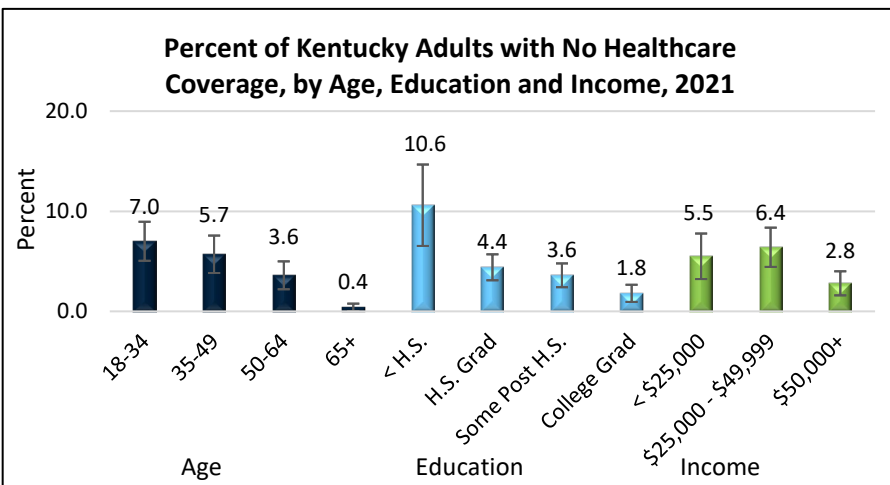
At Risk: Adults who answered “No” are considered at risk. Who is at risk in Kentucky?

- Only 4.3% of Kentucky adults reported having no healthcare coverage, less than the U.S. median prevalence (7.1%).
- There is 5.5% of males and 3.2% of females with no healthcare coverage.
- There is 3.9% of white Kentuckians and 3.1% of Black Kentuckians with no healthcare coverage.
- Young adults aged 18-34 reported higher prevalence of no healthcare coverage than adults aged 65 years or older (7.0% vs. 0.4%).
- Adults with less than high school education reported a higher prevalence of no healthcare coverage than those with a college degree (10.6% vs. 1.8%).
- The prevalence of no healthcare coverage was higher among adults with an annual household income between \$25,000—\$49,999 than among those with a household income of \$50,000 or more (6.4% vs. 2.8%).

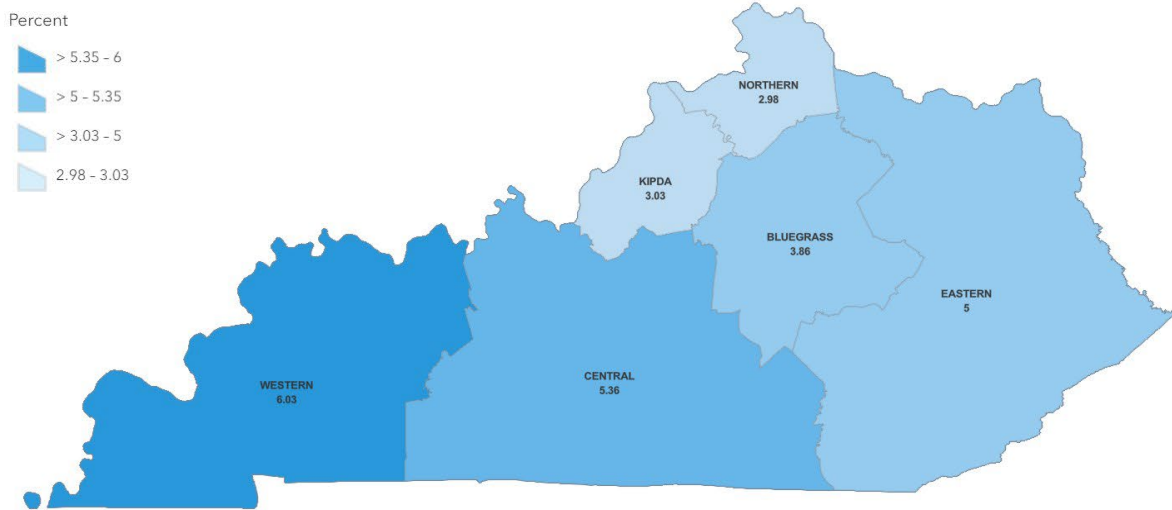
*Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

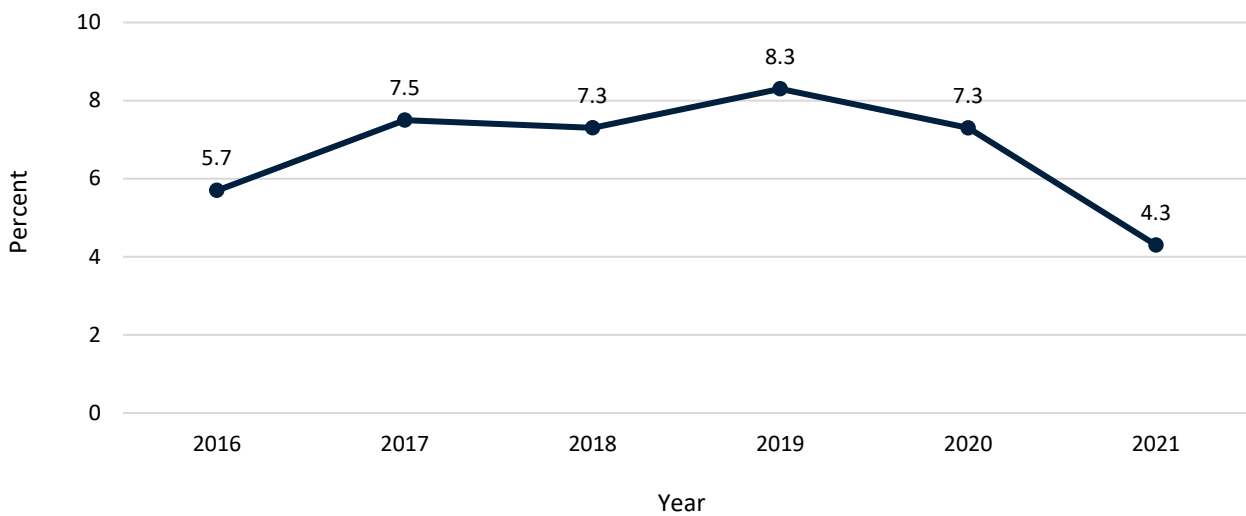


Percent of Kentucky Adults with No Healthcare Coverage by Region, 2021



Statewide Prevalence: 4.3
 Nationwide Median: 7.1

Percent of Kentucky Adults with No Healthcare Coverage, by Year, 2016-2021



Health Behavior Factors

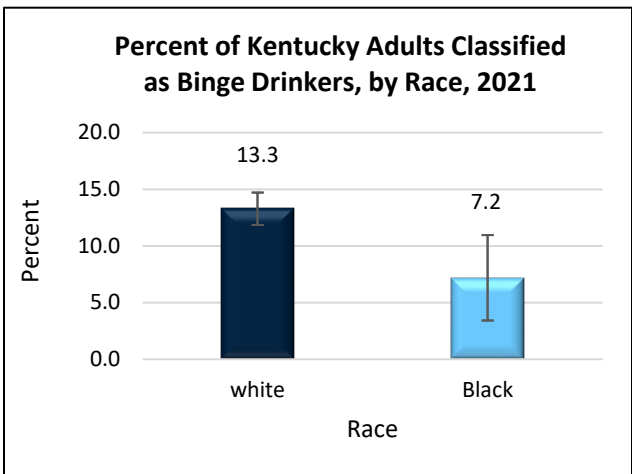
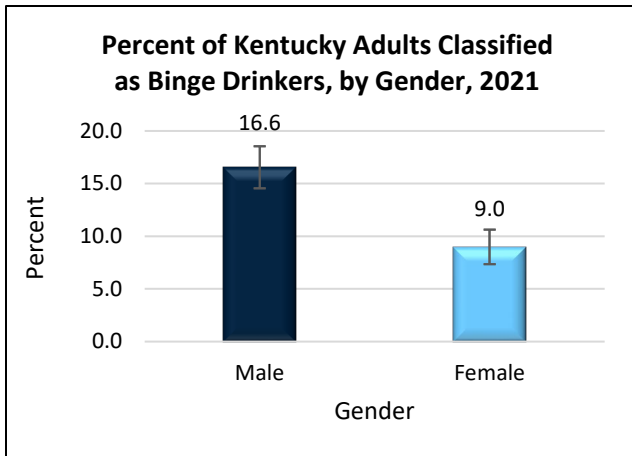
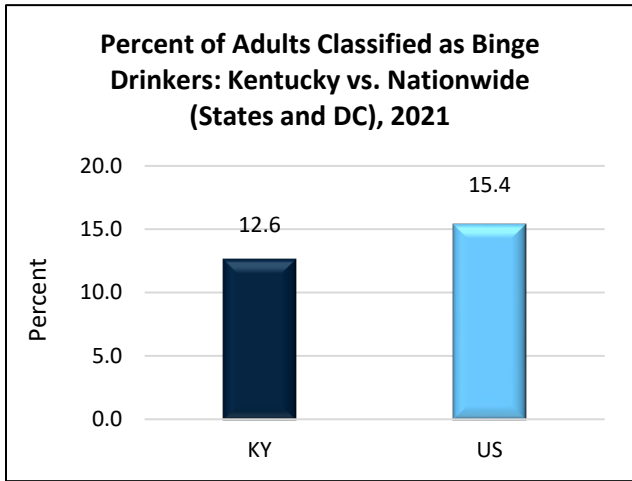
Alcohol Consumption: Binge Drinking

Question: Considering all types of alcoholic beverages, how many times during the past month did you have four or more drinks on one occasion?

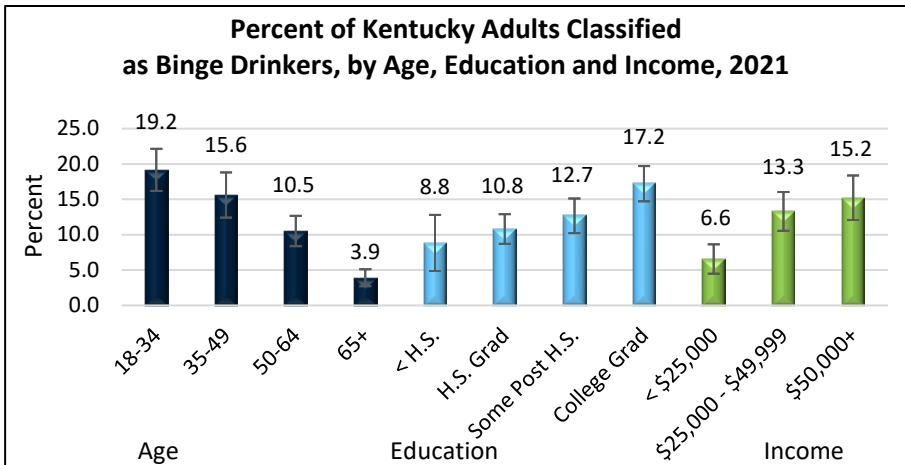
At Risk: Adult men who reported having five or more drinks on one occasion and adult females who reported having four or more drinks on one occasion (in the past month) are considered at risk. Who is at risk in Kentucky?

- In 2021, the prevalence of binge drinking among KY adults (12.6%) was lower than the U.S. median prevalence (15.4%).
- The prevalence of binge drinking among men was almost twice that among women (16.6% to 9.0%).
- The prevalence of binge drinking among white Kentuckians (13.3%) is higher than among Black Kentuckians (7.2%).
- The prevalence of binge drinking was higher among adults aged 18-34 years, 35-49 years and 50-64 years than those ages 65 years or older.
- Binge drinking was highest among adults with a college degree (17.2%) and lowest among those with less than high school education (8.8%).
- Binge drinking was more common among those with an annual income of \$50,000 or more than those earning less than \$25,000 a year (15.2% vs. 6.6%).

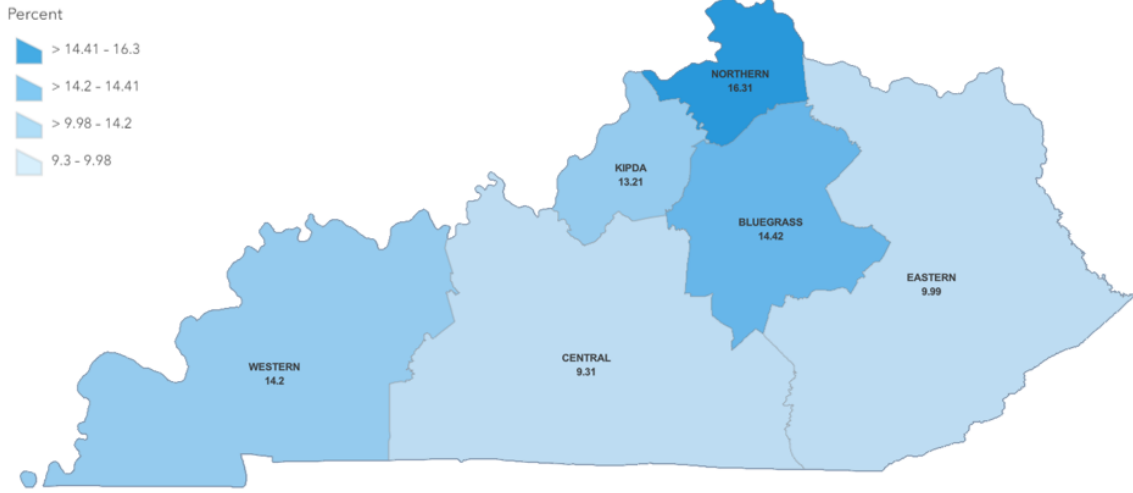
* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

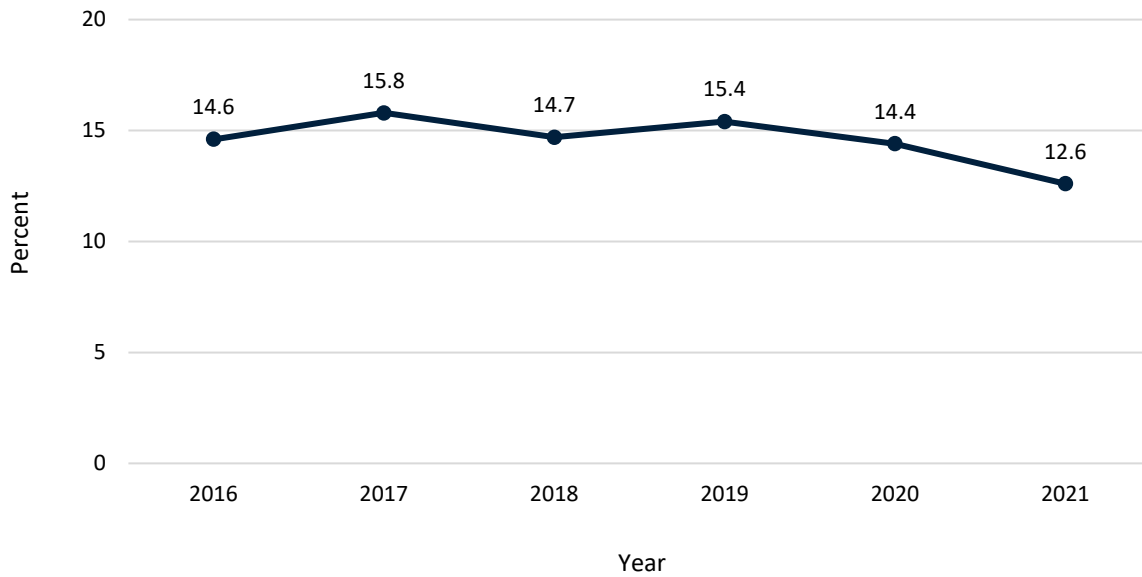


Percent of Kentucky Adults Classified as Binge Drinkers by Region, 2021



Statewide Prevalence: 12.6
 Nationwide Median: 15.4

Percent of Kentucky Adults Classified as Binge Drinkers, by Year, 2016-2021



No Leisure Time Physical Activity

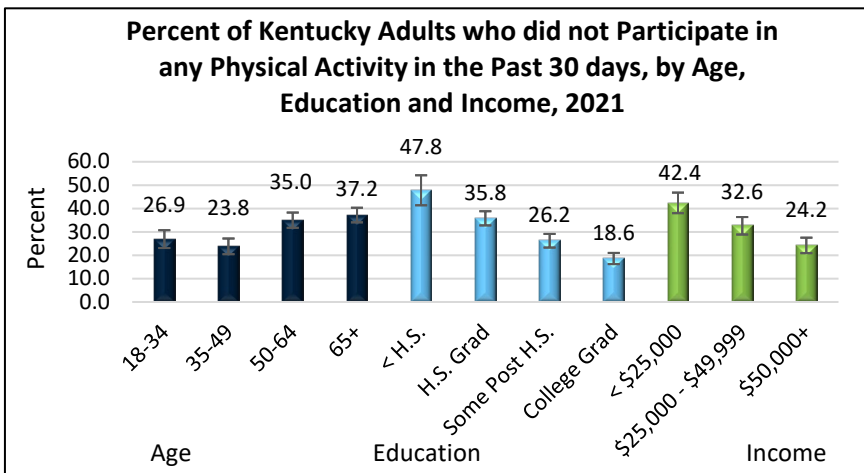
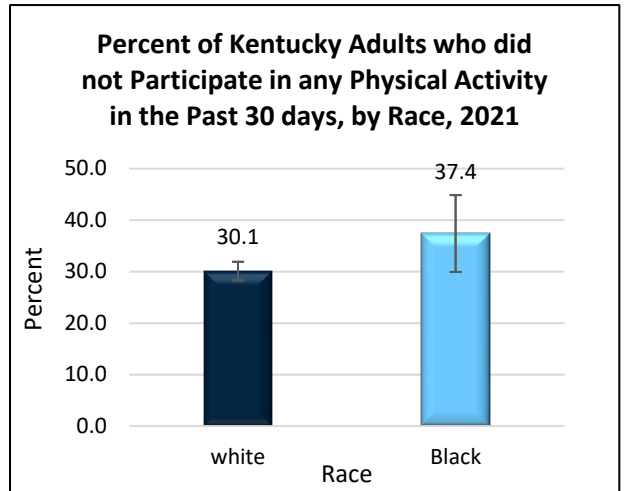
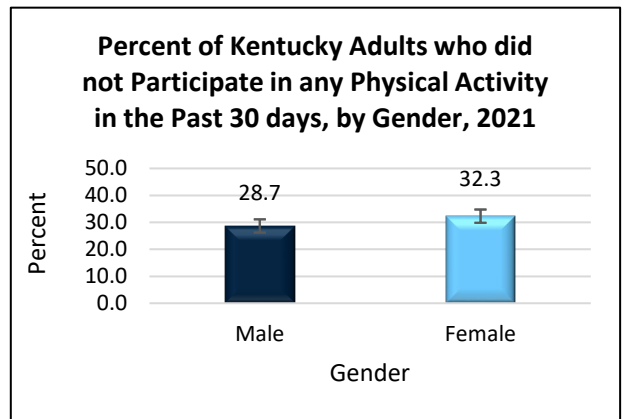
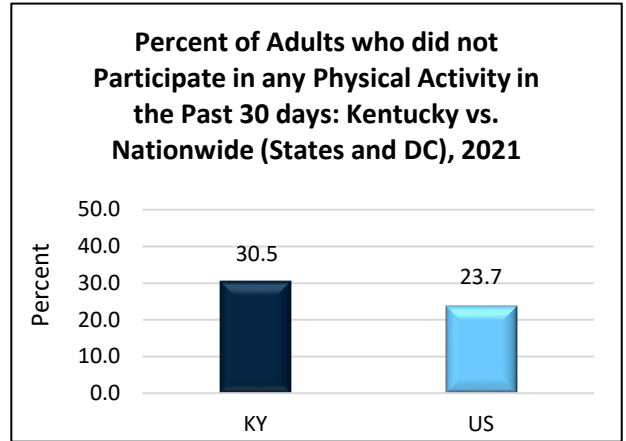
Question: During the past 30 days, other than your regular job, did you participate in any physical activity or exercise such as running, calisthenics, golf, gardening or walking for exercise?

At Risk: Adults who did not participate in physical activity or exercise during the last 30 days are considered at risk.

Who is at risk in Kentucky?

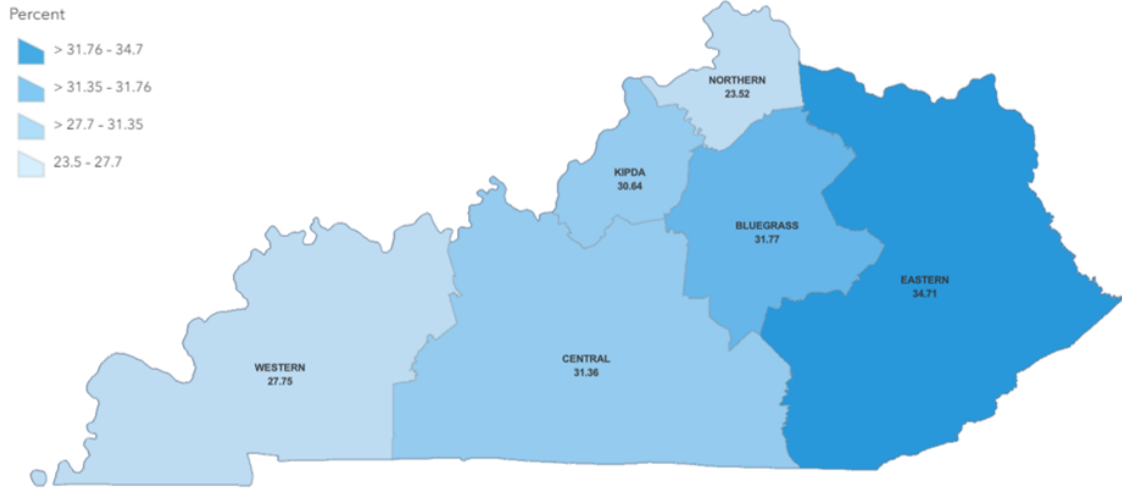
- In 2021, 30.5% of Kentucky adults reported no leisure time activity. This estimate was higher than the U.S. median (23.7%).
- The prevalence of no leisure time physical activity by gender is higher in females (32.3) than males (28.7).
- The prevalence of no leisure time physical activity was higher in Black Kentuckians (37.4%) than white Kentuckians (30.1%).
- No leisure time physical activity increased with age, with the highest prevalence reported among adults aged 65 years and older (37.2%) and the lowest among those aged 35-49 years (23.8%).
- When compared by education, no leisure time activity was highest among adults with less than high school education (47.8%) and lowest among those with a college degree (18.6%).
- The prevalence of no leisure time physical activity decreased as household income increased.

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



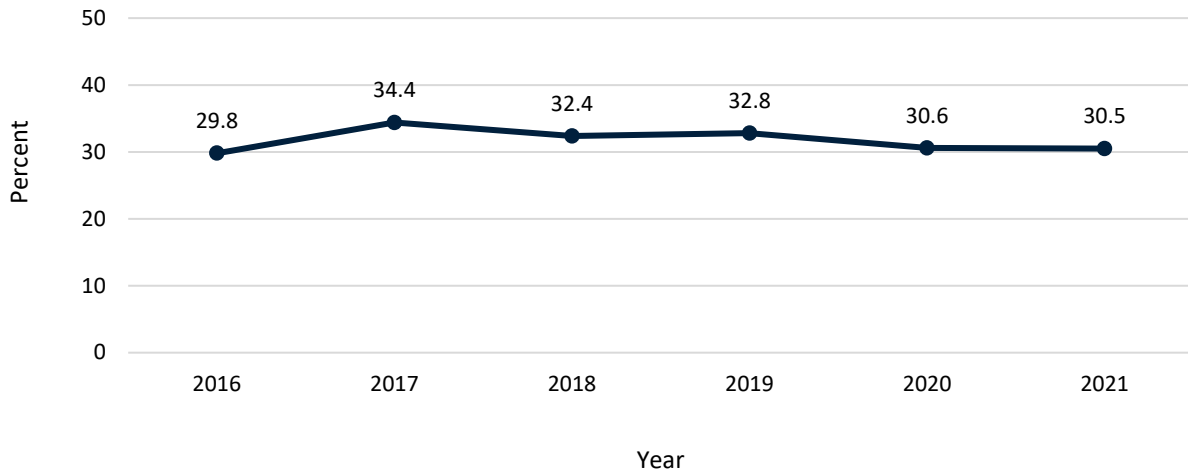
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults who did not Participate in any Physical Activity in the Past 30 Days by Region, 2021



Statewide Prevalence: 30.5
 Nationwide Median: 23.7

Percent of Kentucky Adults who did not Participate in any Physical Activity in the Past 30 days, by Year, 2016-2021



Tobacco Use

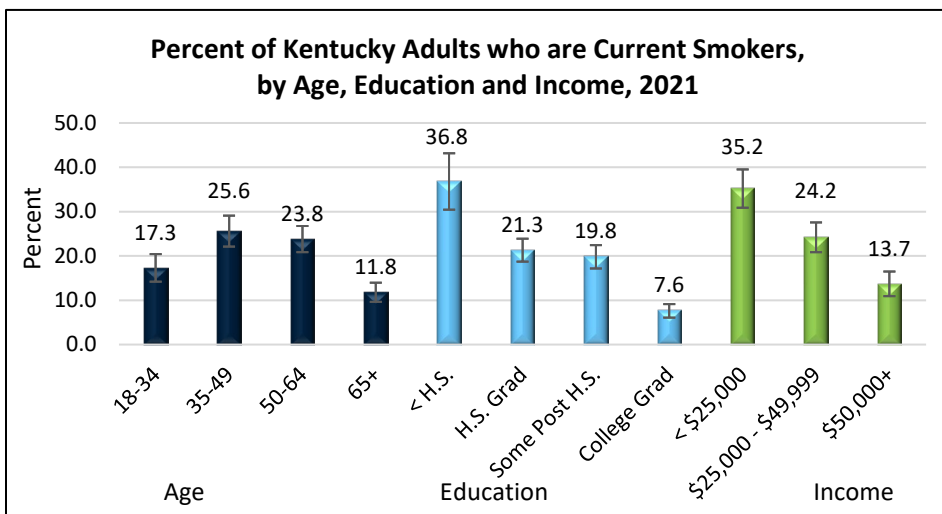
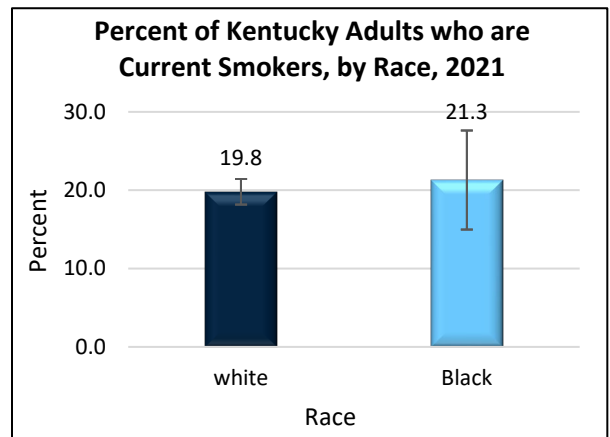
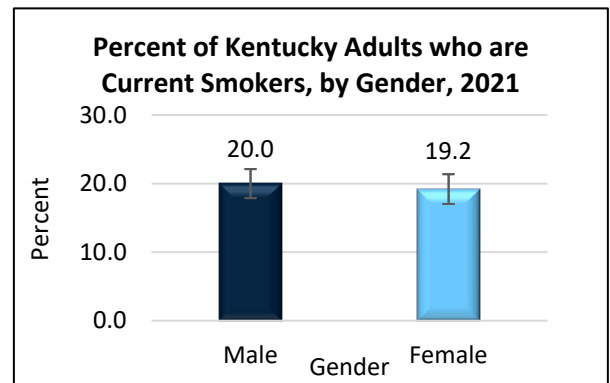
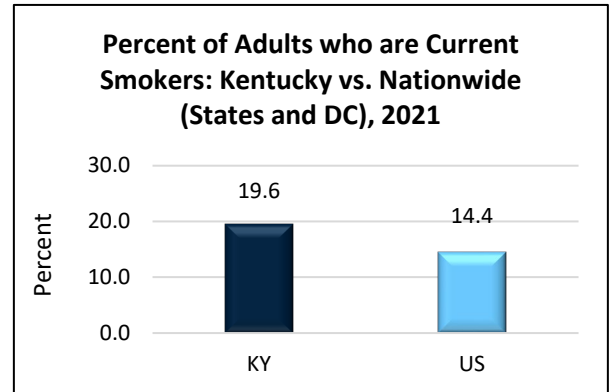
Question: If you have smoked at least 100 cigarettes in your entire life, are you now smoking daily, some days or not at all?

At Risk: Adults who are “Current Smokers” (i.e., smoke “every day” or “some days” are considered at risk).

Who is at risk in Kentucky?

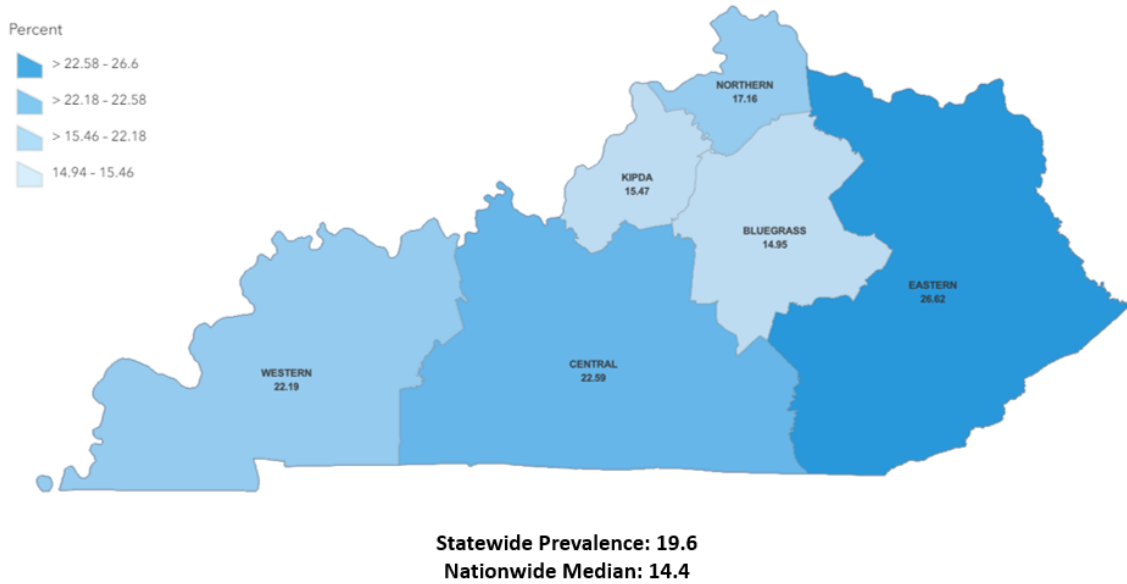
- 19.6% of Kentucky adults reported that they were current smokers in 2021. This estimate was higher than the U.S. median (14.4%).
- The prevalence of cigarette smoking in males (20.0%) is slightly higher than in females (19.2%).
- The prevalence of cigarette smoking was close to the same for Black (21.3%) and white (19.8%) Kentuckians.
- The prevalence of cigarette smoking was lower among adults aged 65 and older (11.8%) compared with other age groups.
- The prevalence of cigarette smoking decreased as education level increased: 36.8% of adults with less than a high school education reported that they were current smokers, compared with 7.6% of those with a college degree.
- Cigarette smoking is more common among those with an annual household income of less than \$25,000 than those with a higher annual household income.

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.

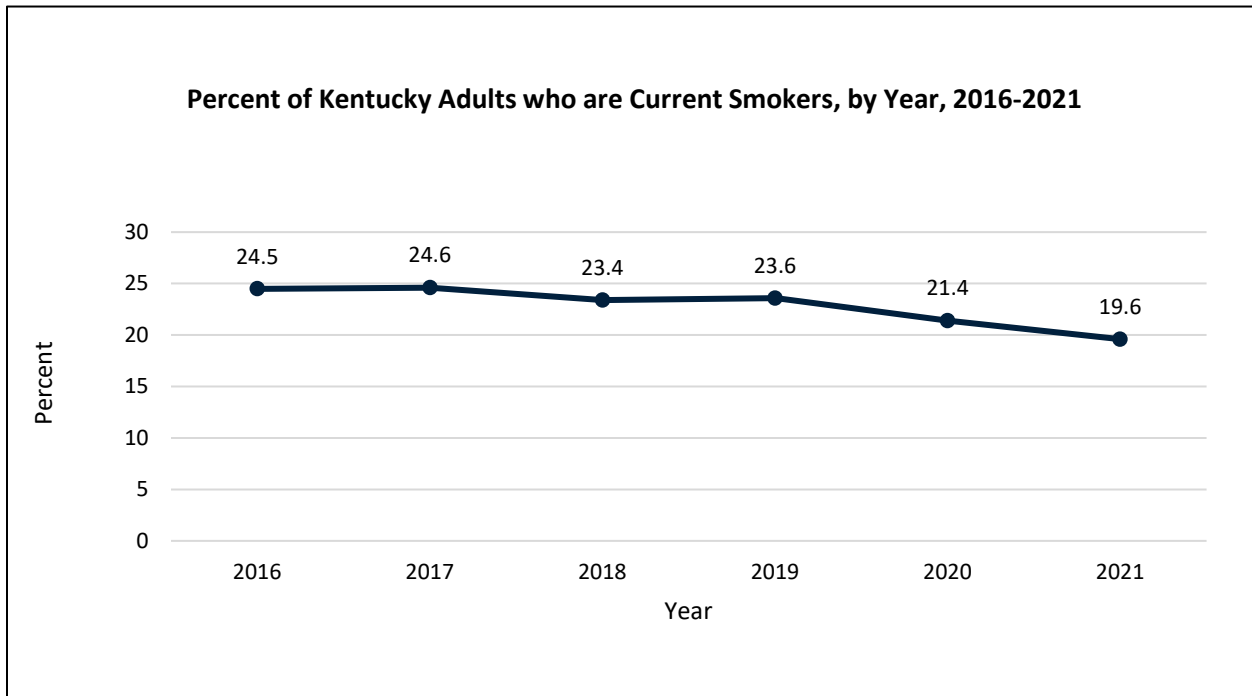


The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults who are Current Smokers by Region, 2021



Percent of Kentucky Adults who are Current Smokers, by Year, 2016-2021



Health Outcomes

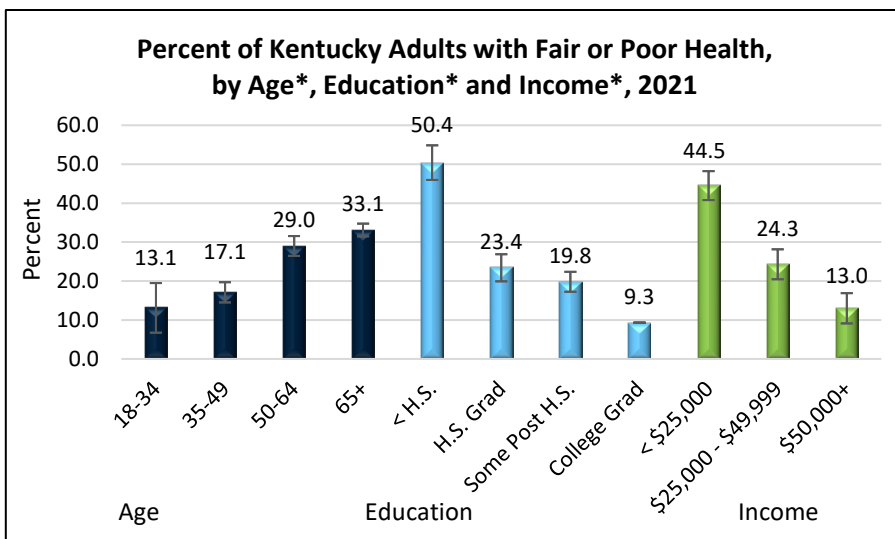
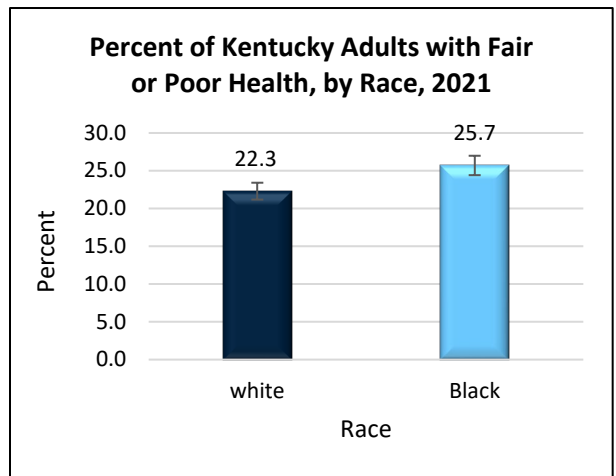
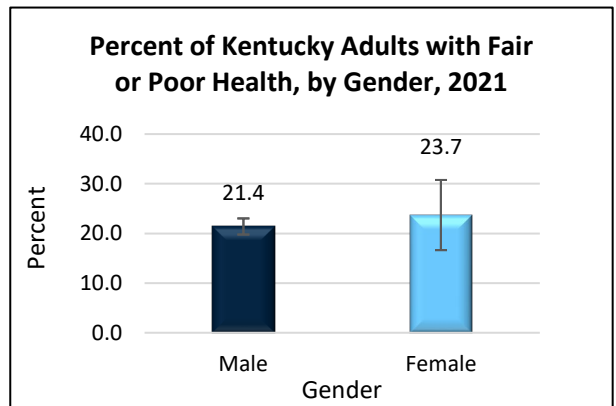
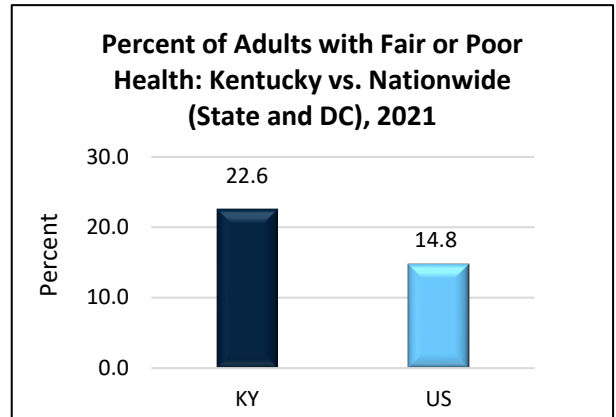
General Health

Question: Have you ever been told by a doctor, nurse or other health professional that you have fair or poor health?

At Risk: Adults who answered “Yes” are considered at risk. Who is at risk in Kentucky?

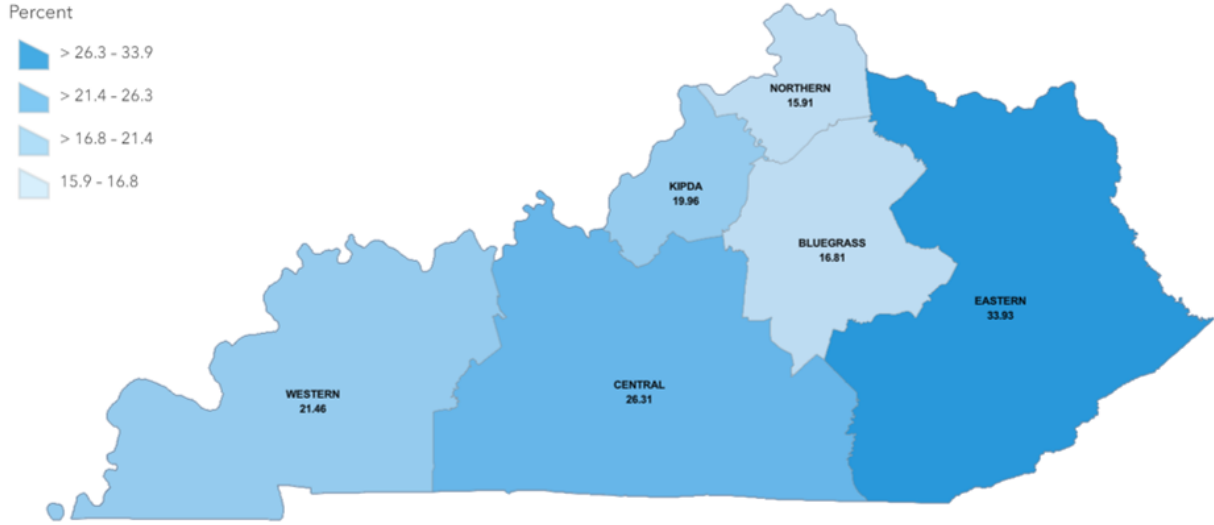
- About 22.6% of Kentucky adults reported fair or poor health a higher prevalence than the U.S. median prevalence (14.8%).
- Females (23.7%) reported a higher prevalence of fair or poor health than males (21.4%).
- The prevalence of fair or poor health was higher in Black Kentuckians (25.7%) than in white Kentuckians (22.3%).
- The prevalence of fair or poor health increases with age. The highest prevalence was among adults aged 65 years or older.
- The prevalence of fair or poor health decreased as education level increased. Adults with less than a high school education (50.4%) reported a higher prevalence of fair or poor health than those with a college degree (9.3%).
- Adults with an annual household income of less than \$25,000 reported a higher prevalence of fair or poor health compared to those with household income of \$50,000 or more (44.5% vs. 13.0%).

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



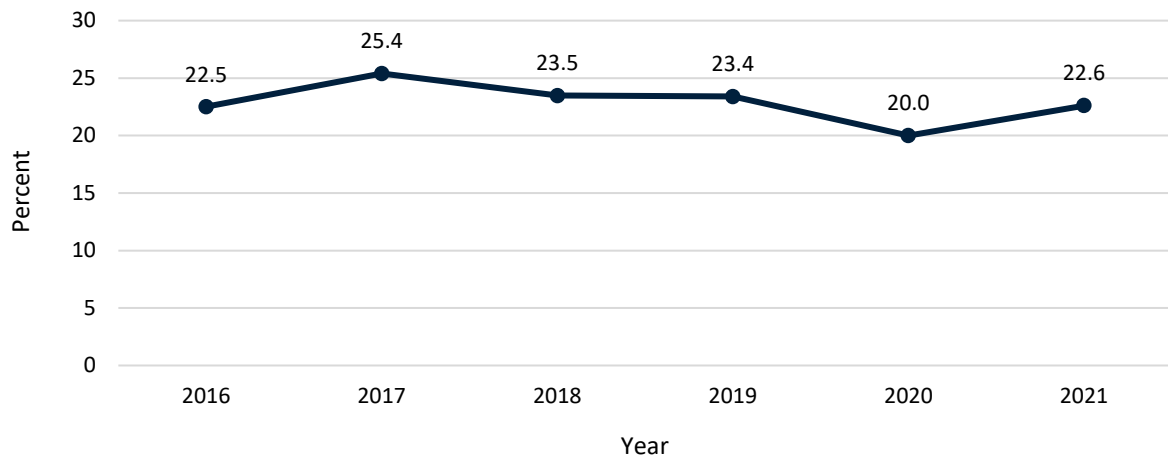
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults with Fair or Poor Health by Region, 2021



Statewide Prevalence: 22.6
 Nationwide Median: 14.8

Percent of Kentucky Adults with Fair or Poor Health, by Year, 2016-2021



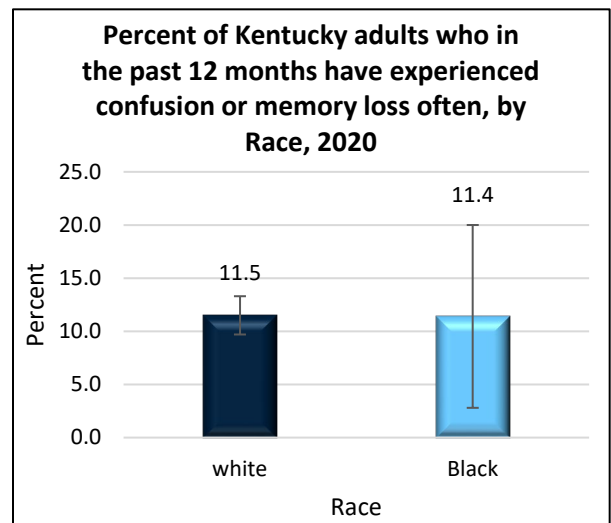
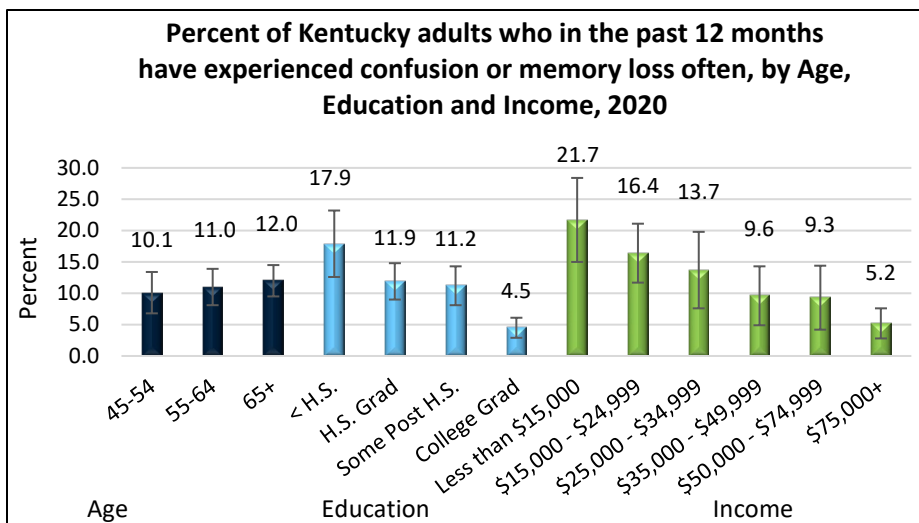
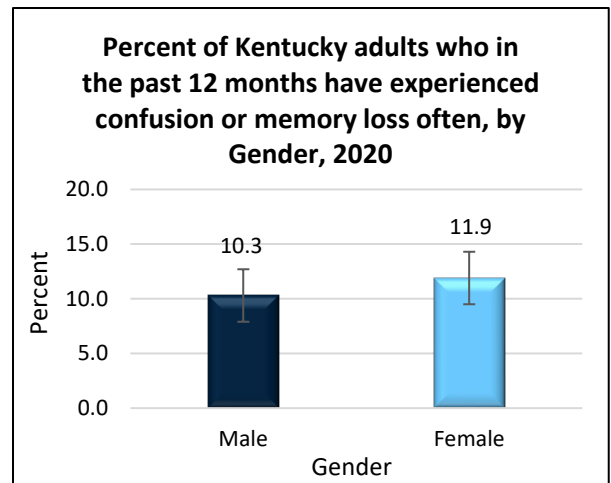
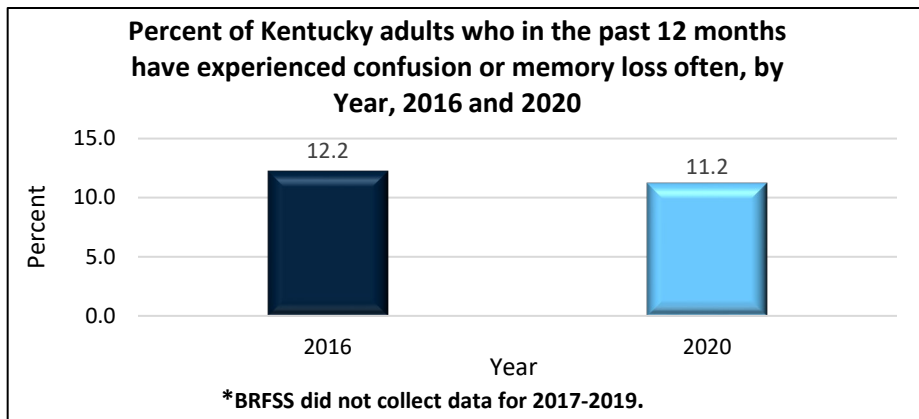
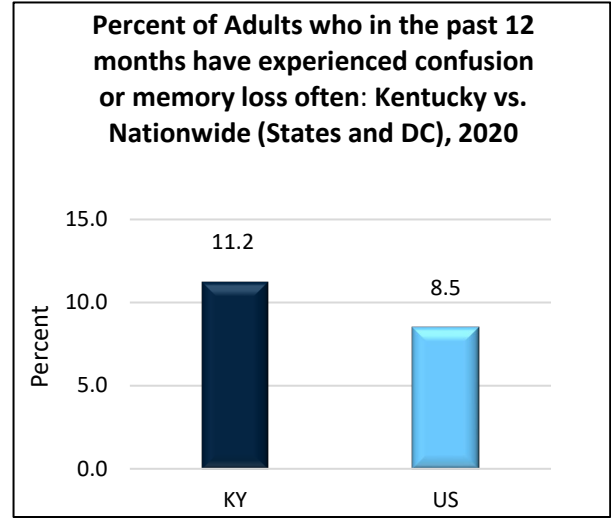
Alzheimer's

Question: Have you been diagnosed with high blood pressure, stroke, cardiovascular diseases, diabetes, obesity or hearing loss?

At Risk: Adults with cognitive decline were more likely to report at least 4 factors (34%) than those without cognitive decline (13%).
Who is at risk in Kentucky?

- An estimated 6.7 million Americans aged 65 and older are living with Alzheimer's dementia in 2023. Seventy-three percent are age 75 and older.
- Women are slightly more likely to have dementia than men.
- In 2020, 11.4% of Black adults and 11.5% of white adults reported experiencing confusion or memory loss often over the past 12 months.

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2020.



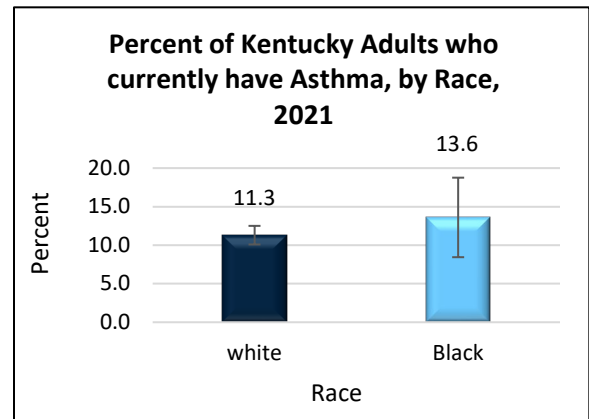
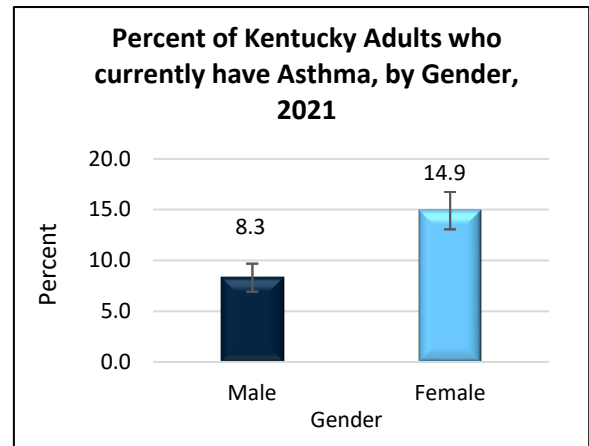
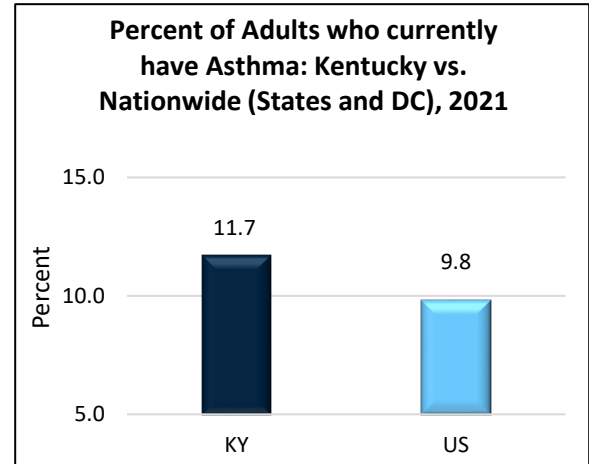
Asthma

Question(s): 1. Have you ever been told by a doctor, nurse or other health professional that you have asthma? (Lifetime). 2. Do you still have asthma? (Current).

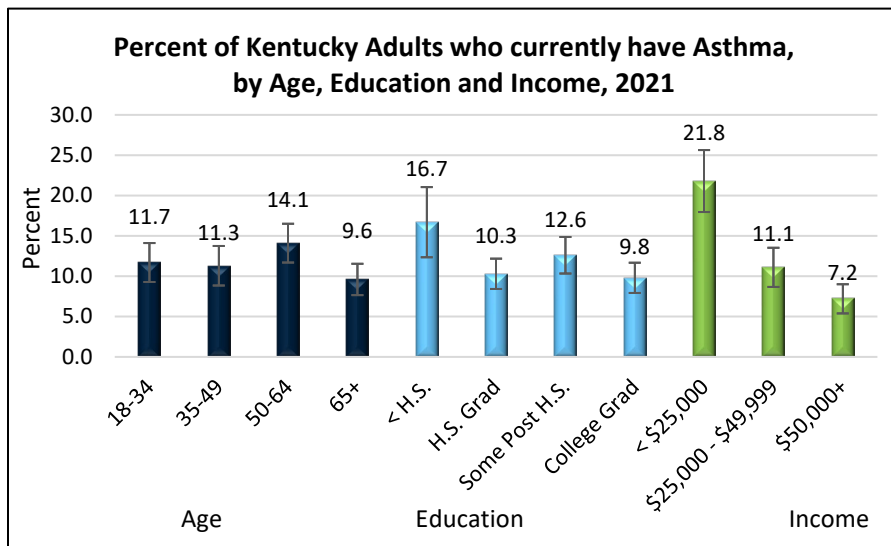
At Risk: Adults who answered “Yes” are considered at risk. Who is at risk in Kentucky?

- In 2021, 11.7% of Kentucky adults reported having asthma. The average number of adults with asthma in the U.S. is 9.8%.
- Kentucky was more likely to have a higher percentage of women with asthma than men (14.9% to 8.3%).
- Black Kentuckians (13.6%) had a higher percentage of asthma when compared to white Kentuckians (11.3%).
- Adults aged 50-64 reported the highest percentage of asthma (14.1%) across all adult age groups. Adults aged 65 and older (9.6%) had the lowest rate of asthma across all adult age groups.
- The percentage of adults with asthma was the highest among those with less than a high school education (16.7%) and lowest with those who had graduated from college (9.8%).
- Asthma was highest among adults with an annual household income of less than \$25,000 (21.8%) compared to those with a higher annual household income of \$50,000 or more (7.2%).

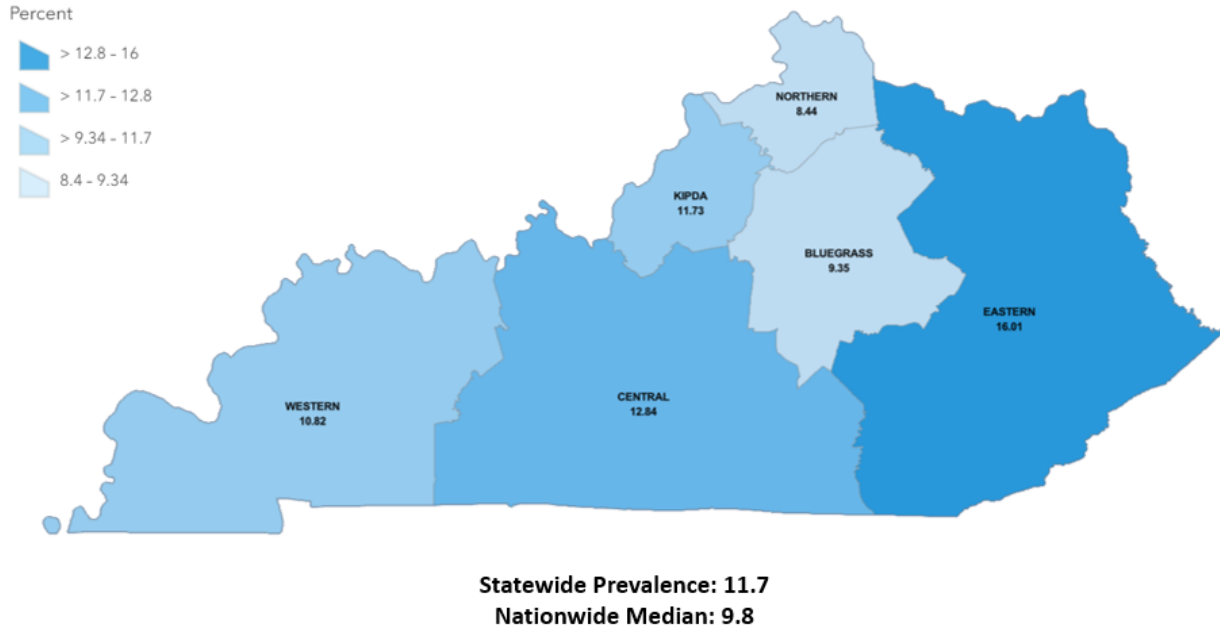
* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



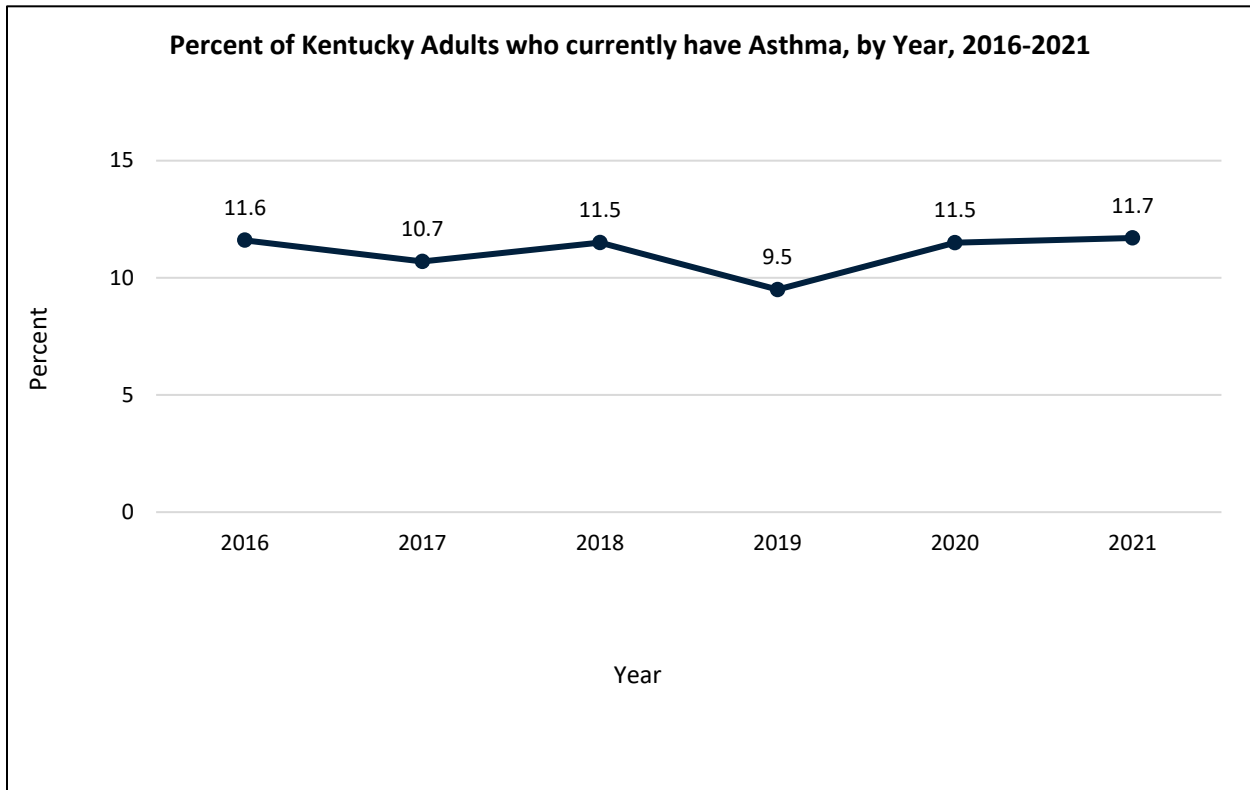
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.



Percent of Kentucky Adults who currently have Asthma by Region, 2021



Percent of Kentucky Adults who currently have Asthma, by Year, 2016-2021

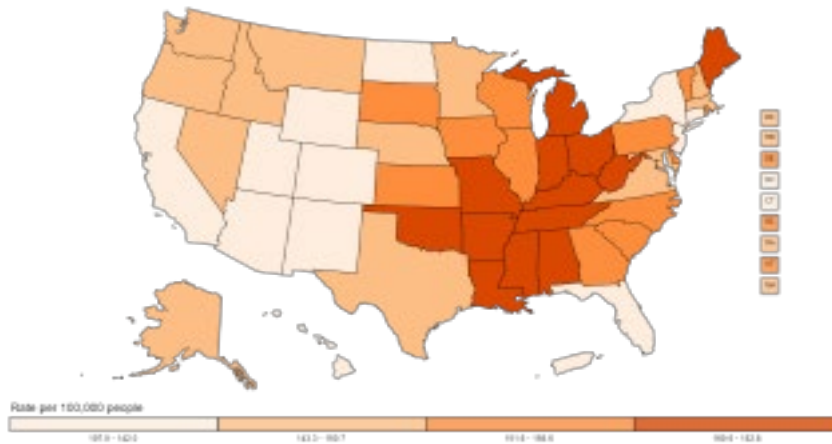


Cancer:

At Risk: Individuals who smoke, are overweight or obese, have a family history of cancer, alcohol use and those with viruses such as Human Papilloma Virus or Hepatitis.

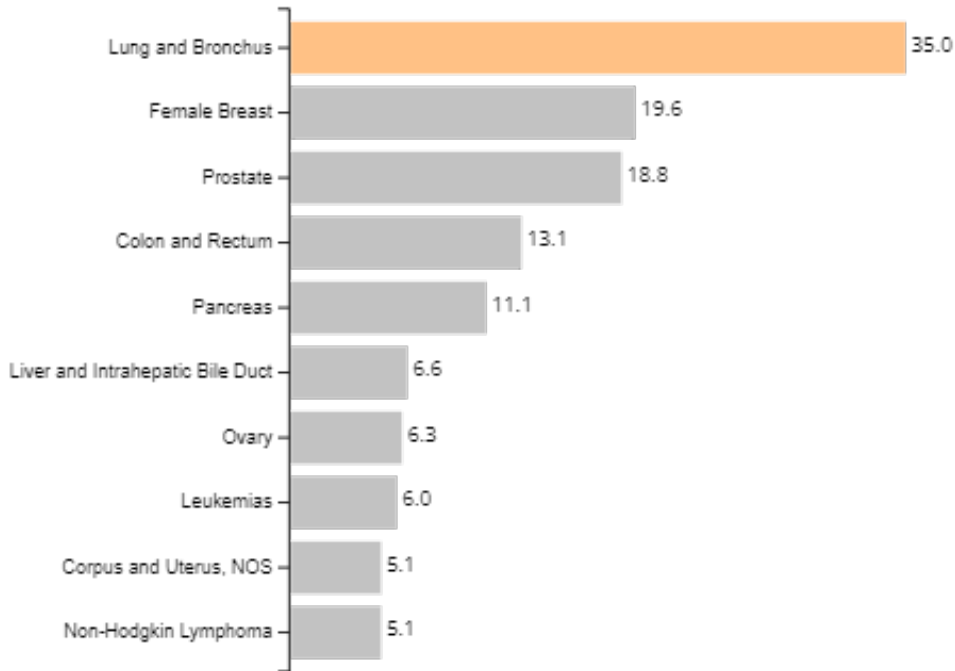
- The U.S. death rate per 100,000 people decreased from 158.5 in 2015 to 146.2 in 2019, per the National Center for Health Statistics, National Vital Statistics System, Mortality Data.
- Cancer site mortality rates in Kentucky for all sites declined from 195.0 per 100,000 in 2015 to 171.9 per 100,000 in 2019.
- The cancer mortality rate for all sites did not differ among white Kentuckians (184.9 per 100,000) and Black Kentuckians (181.2 per 100,000).
- Kentucky age-adjusted cancer incidence rate years 2016-2020 is 506.8 per 100,000 people.

Rate of Cancer Deaths in the United States, 2016-2020 All Types of Cancer, All Ages, All Races and Ethnicities, Male and Female

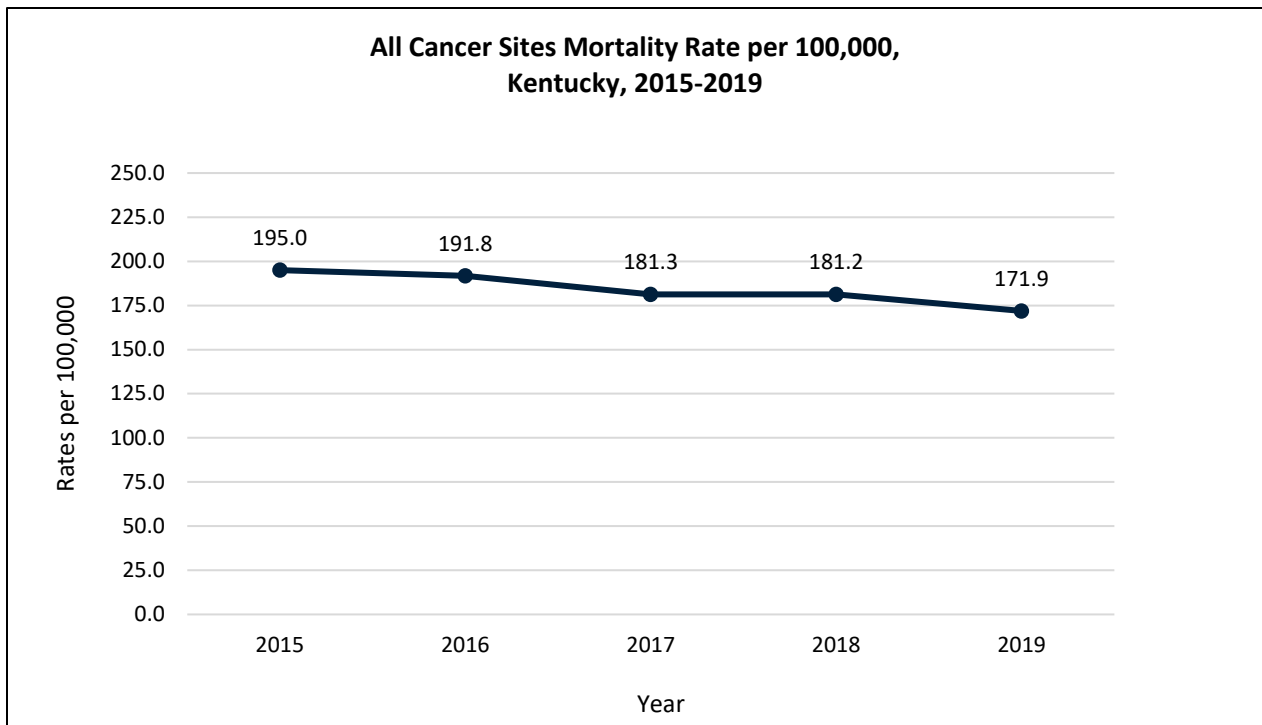


Source - U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2022 submission data (1999-2020); U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; <https://www.cdc.gov/cancer/dataviz/>, released in June 2023.

**Top 10 Cancers by Rates of Cancer Deaths
United States, 2016-2020, All Races and Ethnicities, Male and Female**



Source - U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2022 submission data (1999-2020): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; <https://www.cdc.gov/cancer/dataviz>, released in June 2023.



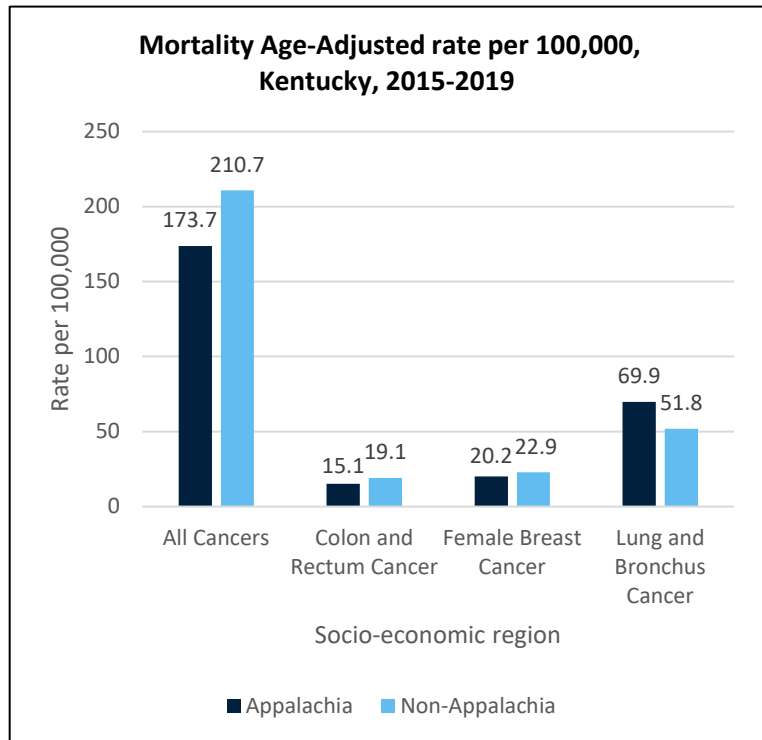
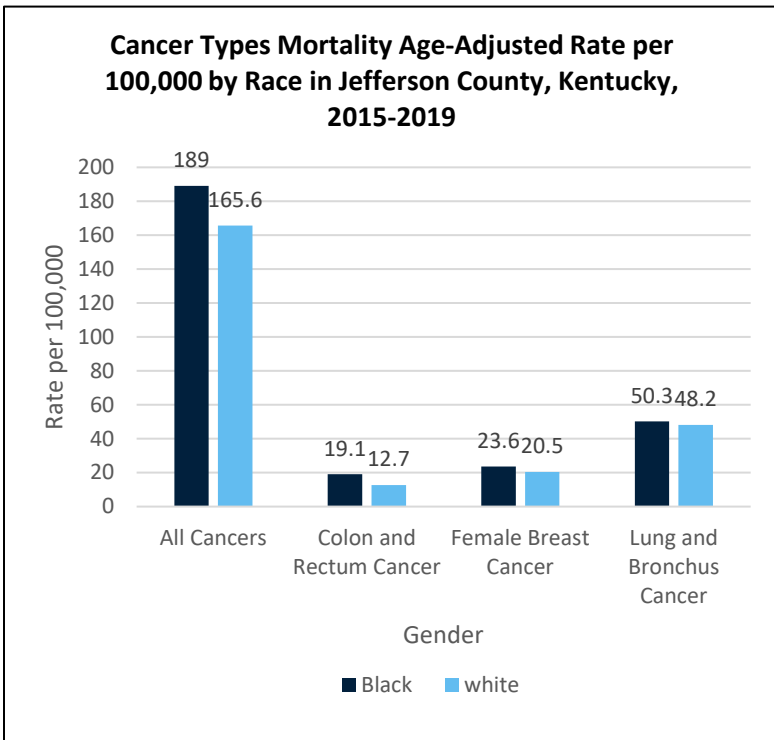
All, Female Breast, Colon and Rectum, Lung and Bronchus Cancer

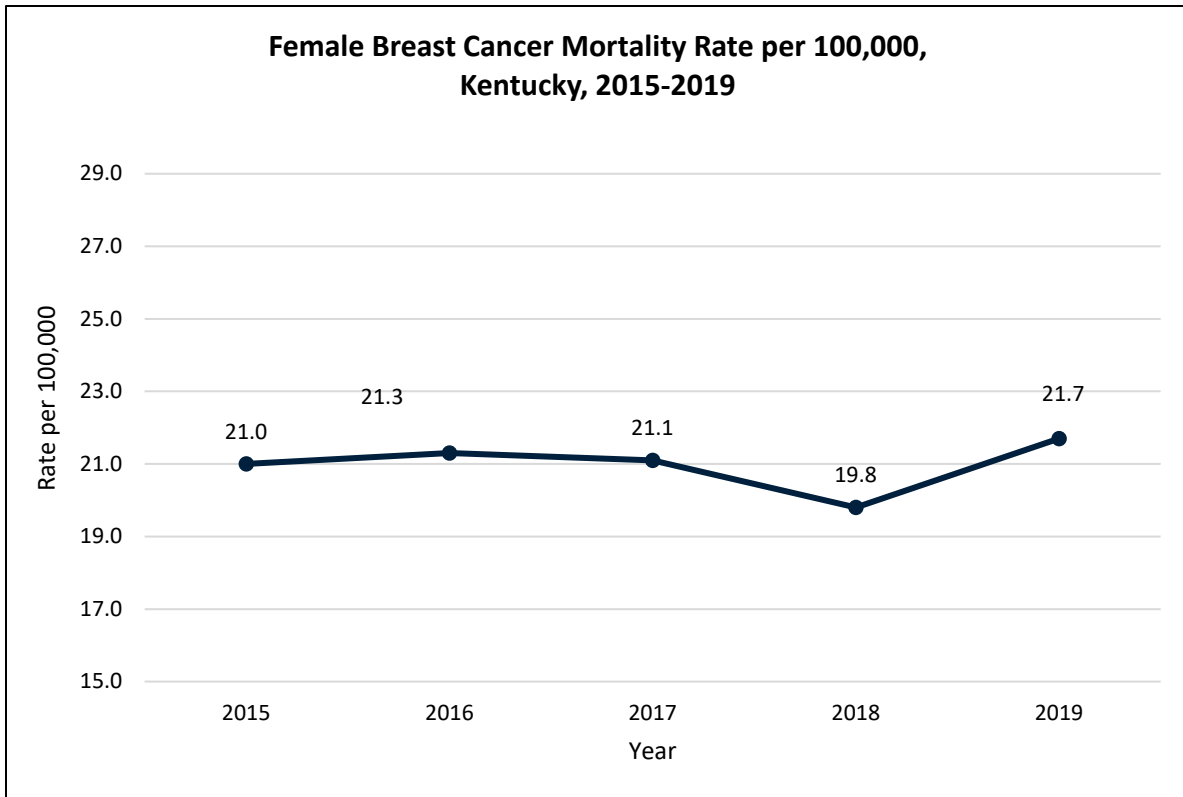
Definition of Indicators: All Female Breast, Colon & Rectum, Lung and Bronchus cancer site mortality rates per 100,000 in Kentucky.

At Risk: Individuals who smoke, are overweight or obese, have a family history of cancer, alcohol use and those with viruses such as Human Papilloma Virus or Hepatitis.
Who is at risk in Kentucky?

- Breast cancer death rates remained flat from 2015 to 2019.
- In 2015-2019, the Area Development Districts with the highest female breast cancer death rates were Kentucky River, Gateway and Buffalo Trace.
- The colon and rectum cancer mortality rate remained flat from 2015 to 2019.
- The Area Development Districts with the highest colon and rectum cancer mortality rates in 2015-2019 were Buffalo Trace, Big Sandy and Kentucky River.
- The lung and bronchus cancer mortality rate declined from 64.0 per 100,000 in 2015 to 51.7 per 100,000 in 2019.
- In 2015-2019, the Area Development Districts with the highest lung and bronchus cancer mortality rates were Big Sandy, Kentucky River and Cumberland Valley.
- There is a disparity of all cancers between Black and white Kentuckians in Jefferson County.
- There is a disparity of all cancers between non-Appalachia (210.7) and Appalachia (173.7) in Kentucky.

* Primary data source: Kentucky Cancer Registry, 2023.





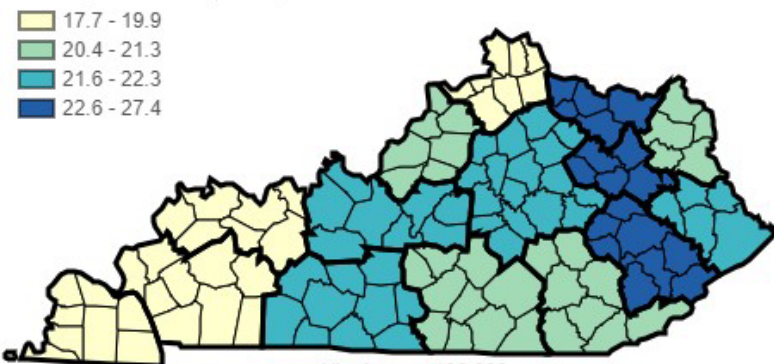
Age-Adjusted Cancer Mortality Rates in Kentucky

Breast, Female, 2015 - 2019

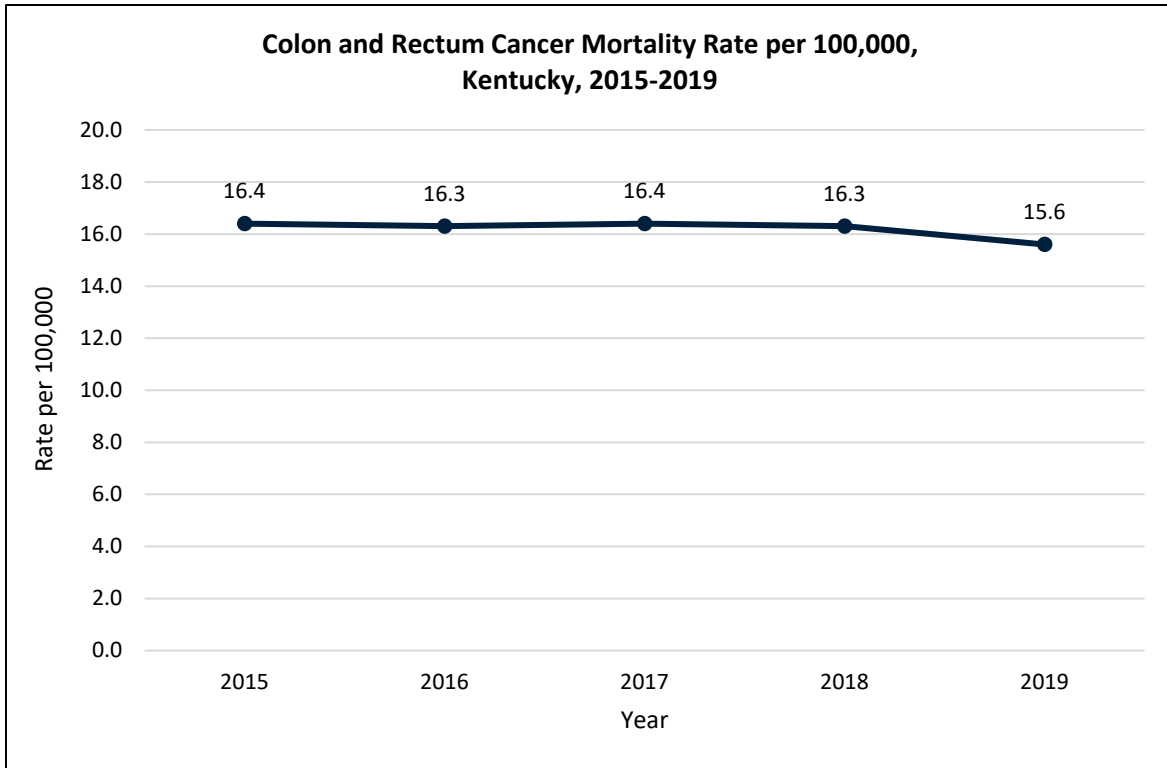
By Area Development District

Age-Adjusted to the 2000 U.S. Standard Million Population

Kentucky Rate: 21.0 / per 100,000



All rates per 100,000.
 Data accessed August 7, 2023. Based on data released July 2021. Data for 2009-2018 is preliminary.
 © 2023 Kentucky Cancer Registry.



Age-Adjusted Cancer Mortality Rates in Kentucky

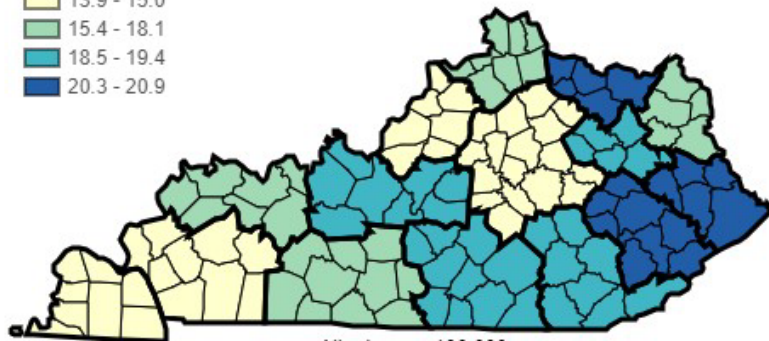
Colon & Rectum, 2015 - 2019

By Area Development District

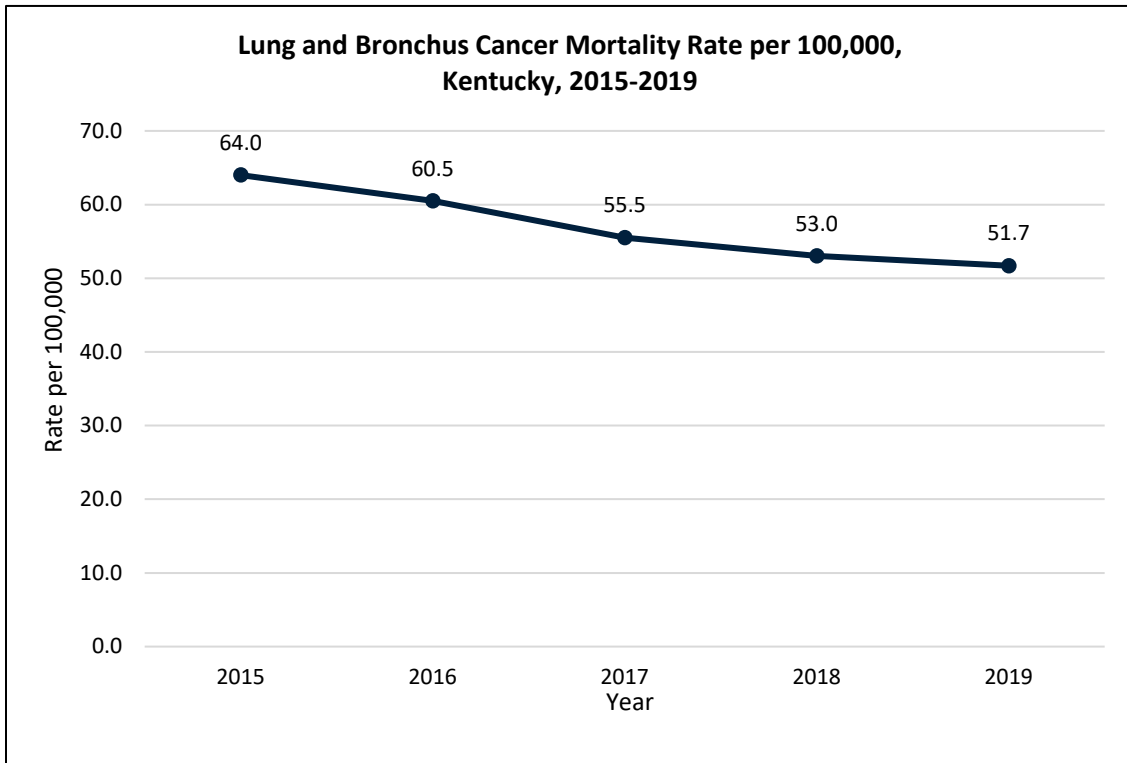
Age-Adjusted to the 2000 U.S. Standard Million Population

Kentucky Rate: 16.2 / per 100,000

- 13.9 - 15.0
- 15.4 - 18.1
- 18.5 - 19.4
- 20.3 - 20.9



All rates per 100,000.
 Data accessed August 7, 2023. Based on data released July 2021. Data for 2009-2018 is preliminary.
 © 2023 Kentucky Cancer Registry.



Age-Adjusted Cancer Mortality Rates in Kentucky

Lung and Bronchus, 2015 - 2019

By Area Development District

Age-Adjusted to the 2000 U.S. Standard Million Population

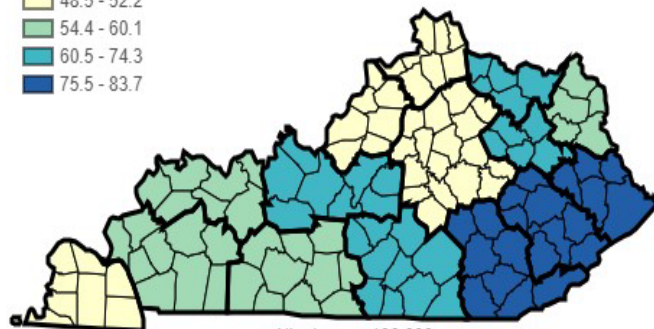
Kentucky Rate: 56.9 / per 100,000

48.5 - 52.2

54.4 - 60.1

60.5 - 74.3

75.5 - 83.7



All rates per 100,000.

Data accessed August 7, 2023. Based on data released July 2021. Data for 2009-2018 is preliminary.

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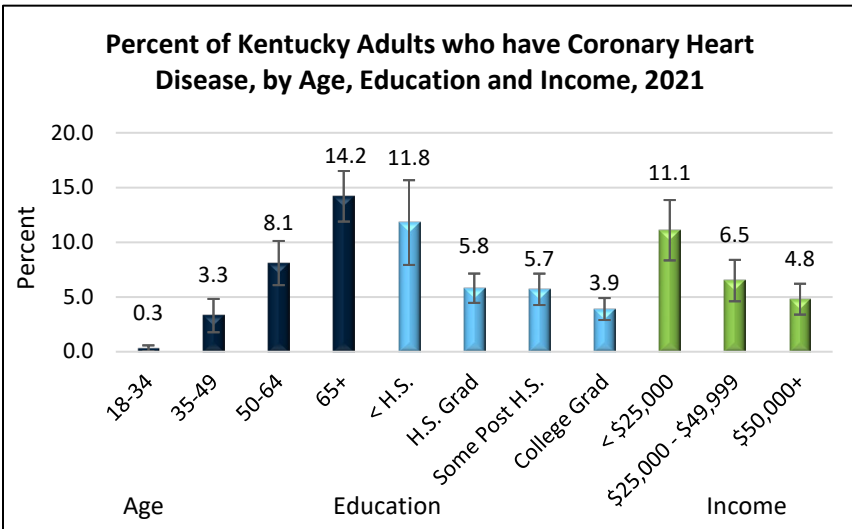
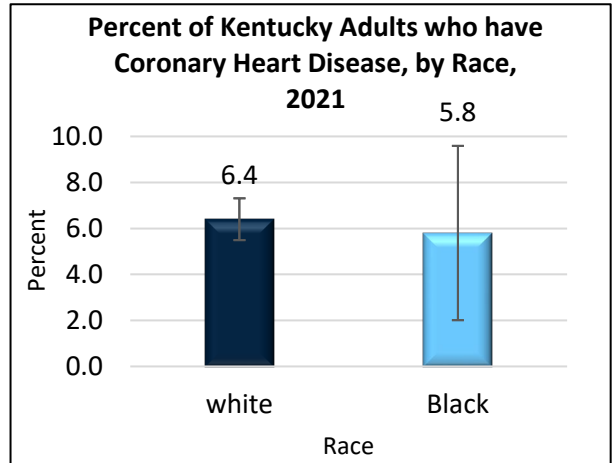
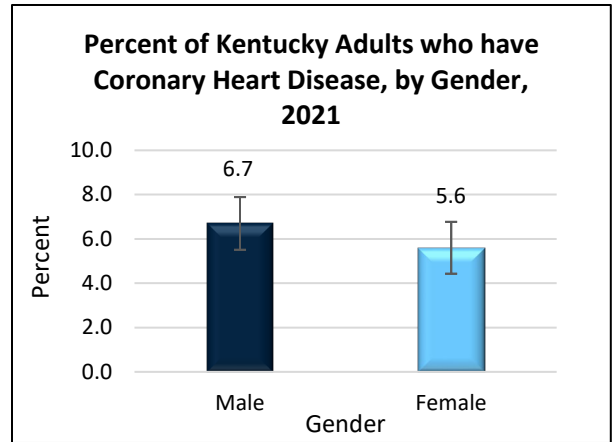
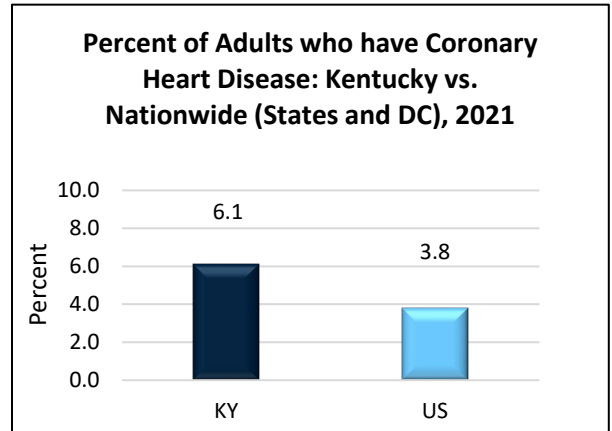
Coronary Heart Disease

Question: Have you ever been told by a doctor, nurse or other health professional that you had angina or coronary heart disease?

At Risk: Adults who answered “Yes” are considered at risk.
Who is at risk in Kentucky?

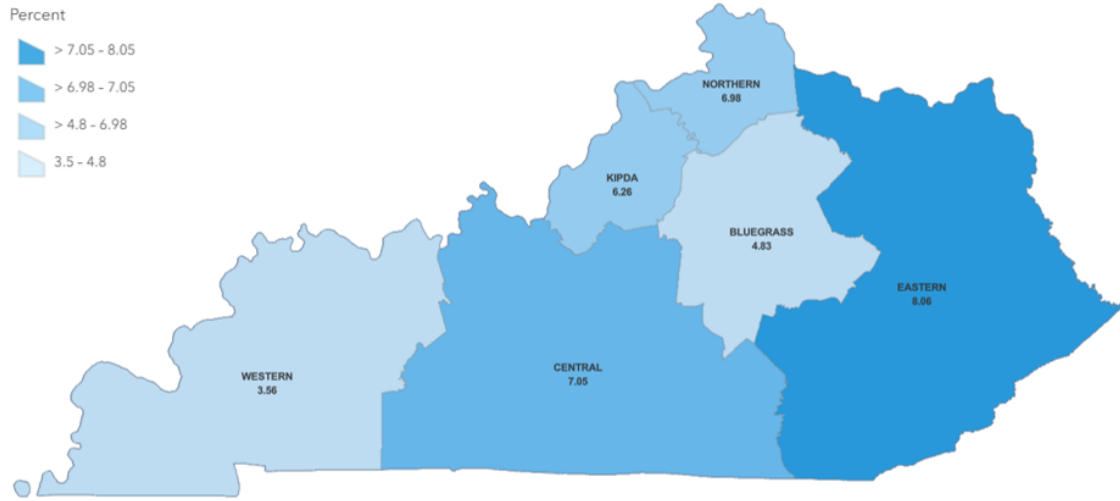
- In 2021, an estimated 6.1% of Kentucky adults reported ever being told by a doctor that they had coronary heart disease. Kentucky (6.1%) has a higher percentage than the U.S. median (3.8%).
- Males (6.7%) reported a higher prevalence of coronary heart disease than females (5.6%).
- The prevalence of coronary heart disease did not differ by race.
- As expected, the prevalence of coronary heart disease increased with age. The smallest prevalence was among adults aged 18-34 years (0.3%), and the highest prevalence was among those aged 65+ years (14.2%).
- The prevalence of coronary heart disease was higher among adults with less than a high school education than among those with a college degree (11.8% vs. 3.9%).
- As annual household income increased, the prevalence of coronary heart disease decreased. The lowest prevalence was among adults with an annual household income of \$50,000 or more (4.8%).

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



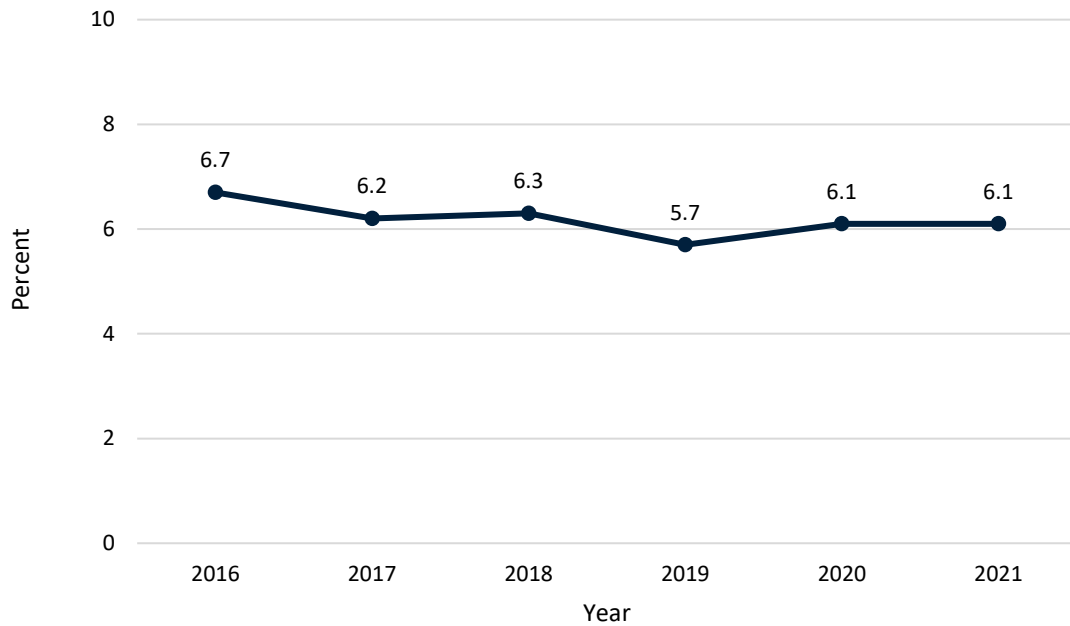
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults who Have Coronary Heart Disease by Region, 2021



Statewide Prevalence: 6.1
 Nationwide Median: 3.8

Percent of Kentucky Adults who have Coronary Heart Disease, by Year, 2016-2021



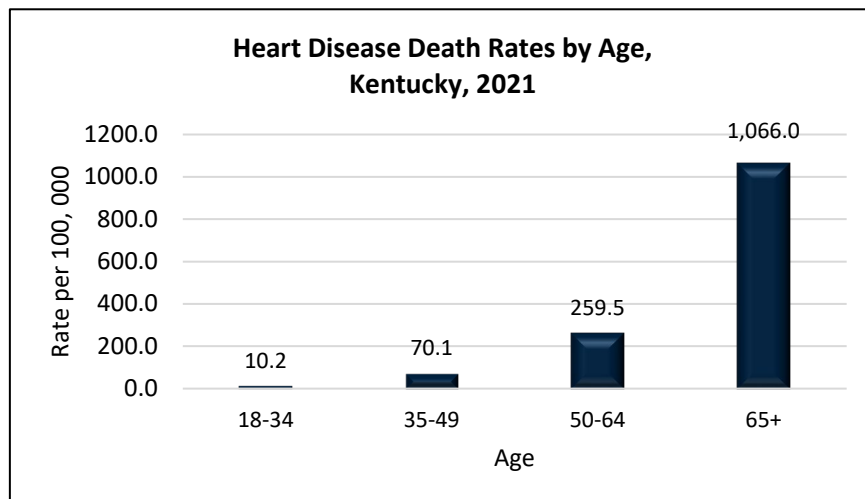
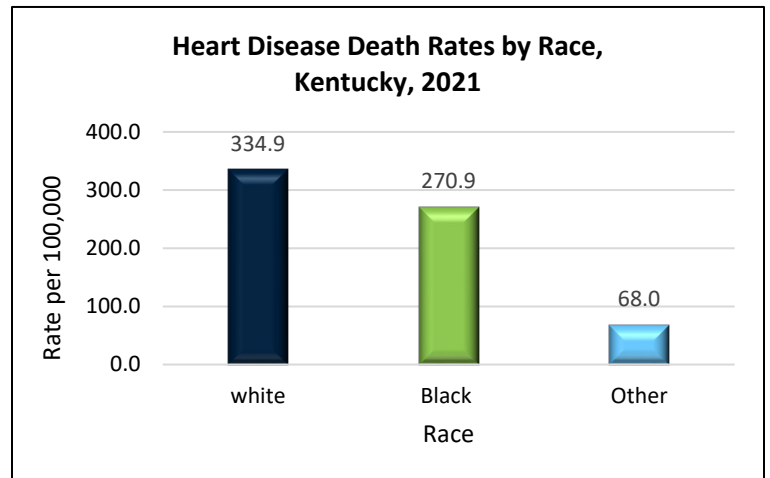
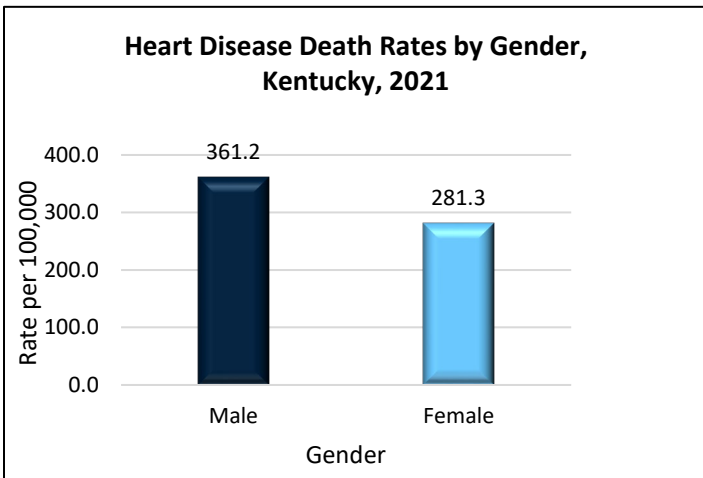
Heart Disease Deaths

Definition of Indicator: Kentuckians with Heart Disease Deaths in 2021.

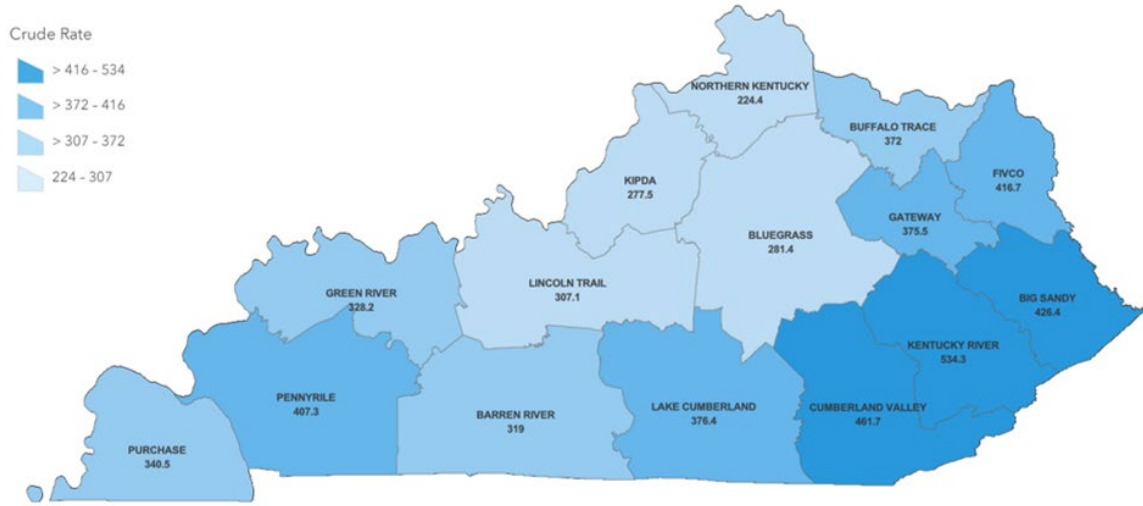
Who is at risk in Kentucky?

- There were 11,195 Kentuckians who died of heart disease in 2021.
- In 2019, Kentucky had a higher rate of 301.0 per 100,000 people than 161.5 per 100,000 people in the U.S.
- Males had more heart disease deaths than females (6,186 to 5,009).
- Most heart disease deaths in Kentucky in 2021 were among white Kentuckians (10,329 at 92%).
- The highest number of heart disease deaths was at age 65 years and older, with a total of 8,211 at 73%.
- The highest number of heart disease deaths occurred in the KIPDA Area Development District at 20%.

*Primary Source: Kentucky Office of Vital Statistics 2021.

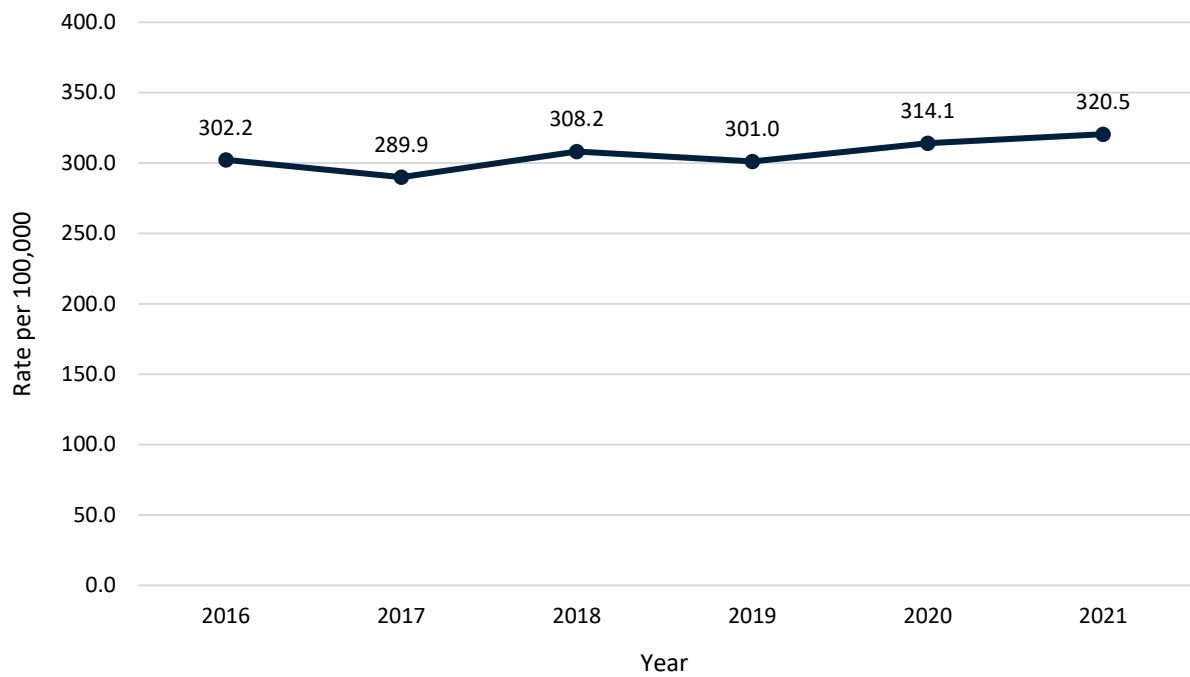


Heart Disease Death Rates per 100,000 by Area Development District, 2021



Statewide Rate: 320.5

Heart Disease Death Rates per 100,000, Kentucky, 2016-2021



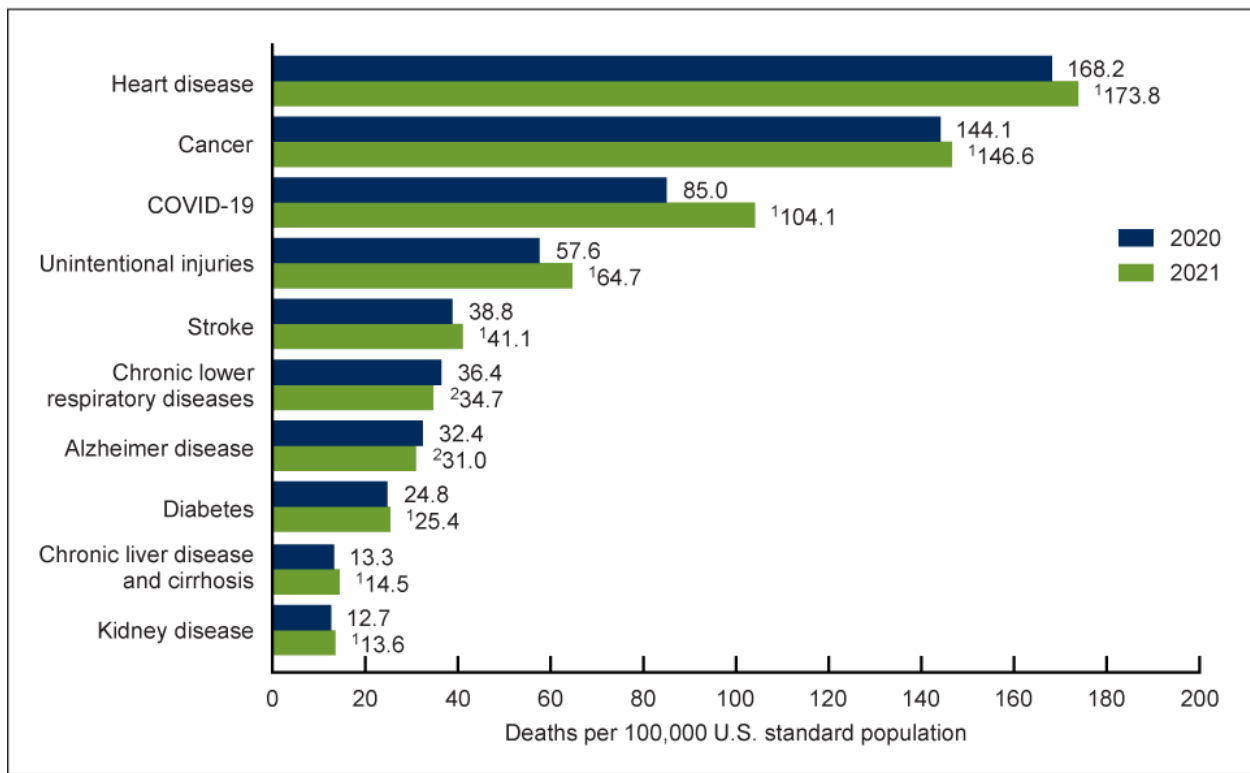
Deaths in Kentucky

- The 2021 leading cause of death in the U.S. is heart disease.
- The 2021 leading cause of death in Kentucky is heart disease.

*Primary Source: Kentucky Office of Vital Statistics 2021.

*Secondary Source: National Center for Health Statistics, National Vital Statistics System, Mortality.

Figure 4. Age-adjusted death rate for the 10 leading causes of death in 2021: United States, 2020 and 2021

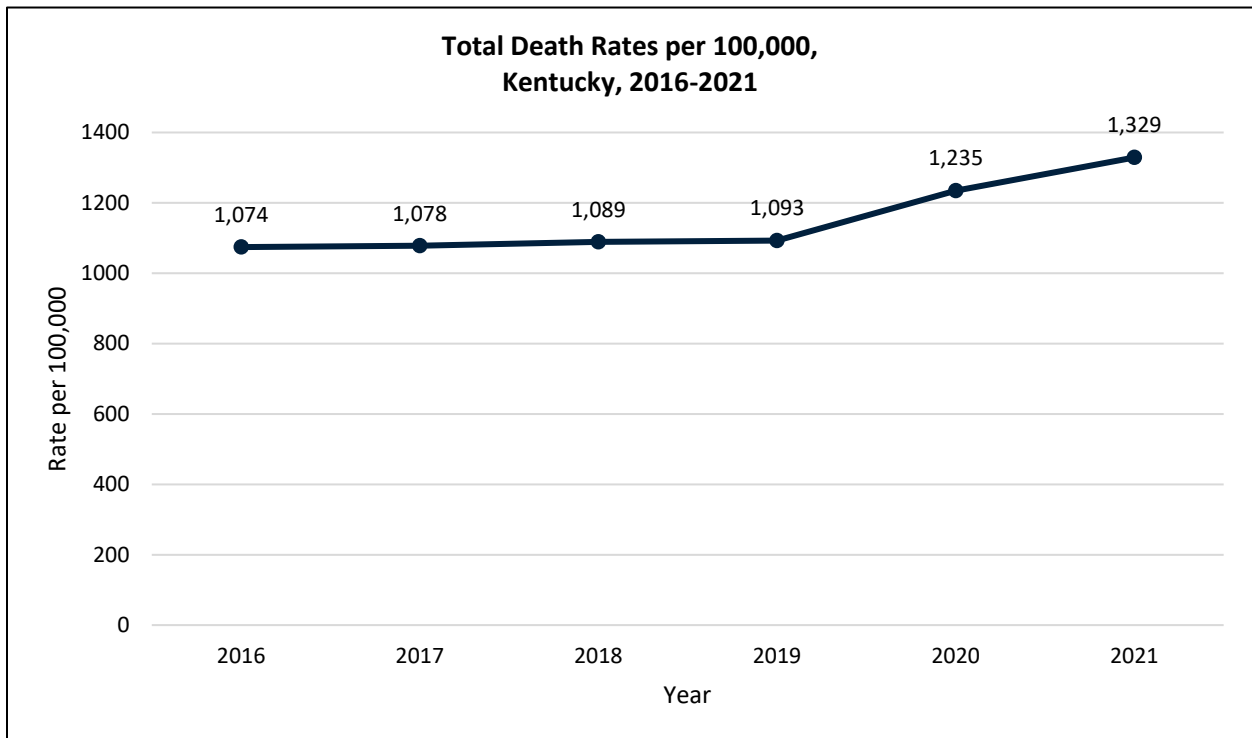
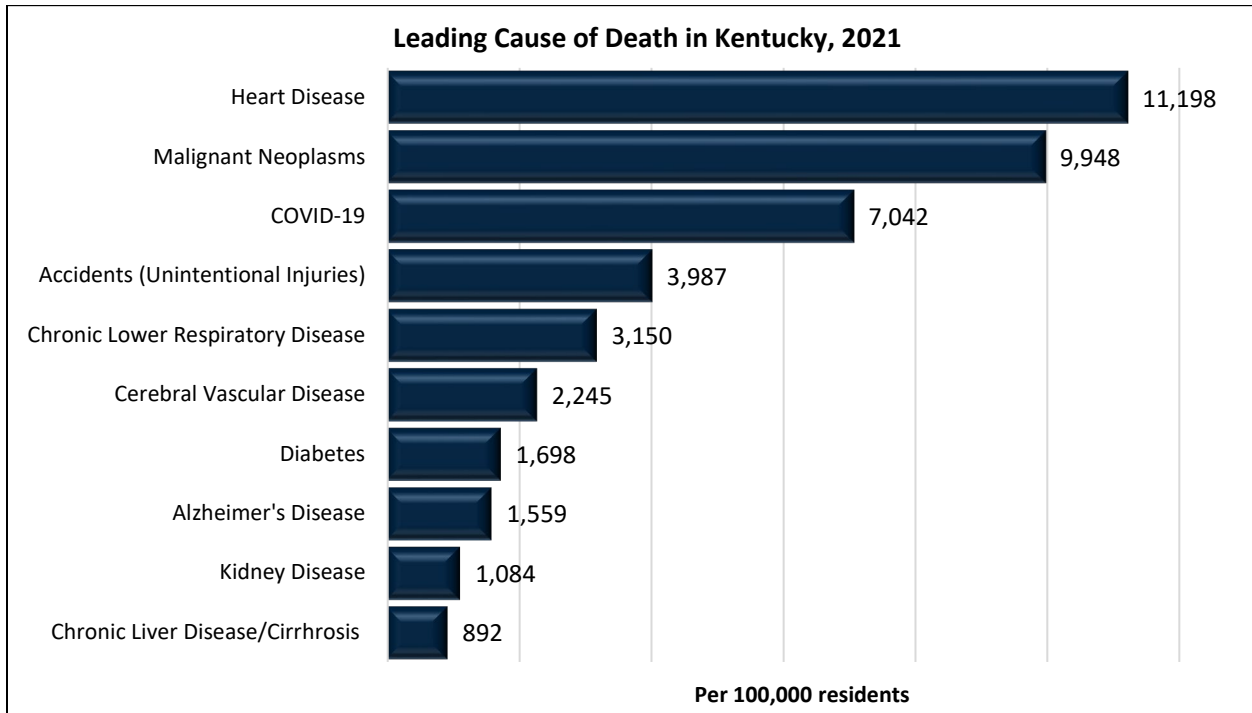


¹Statistically significant increase from 2020 to 2021 ($p < 0.05$).

²Statistically significant decrease from 2020 to 2021 ($p < 0.05$).

NOTES: A total of 3,464,231 resident deaths were registered in the United States in 2021. The 10 leading causes of death accounted for 74.5% of all U.S. deaths in 2021. Causes of death are ranked according to number of deaths. Rankings for 2020 data are not shown. Data table for Figure 4 includes the number of deaths for leading causes and the percentage of total deaths. Access data table for Figure 4 at: <https://www.cdc.gov/nchs/data/databriefs/db456-tables.pdf#4>.

SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.



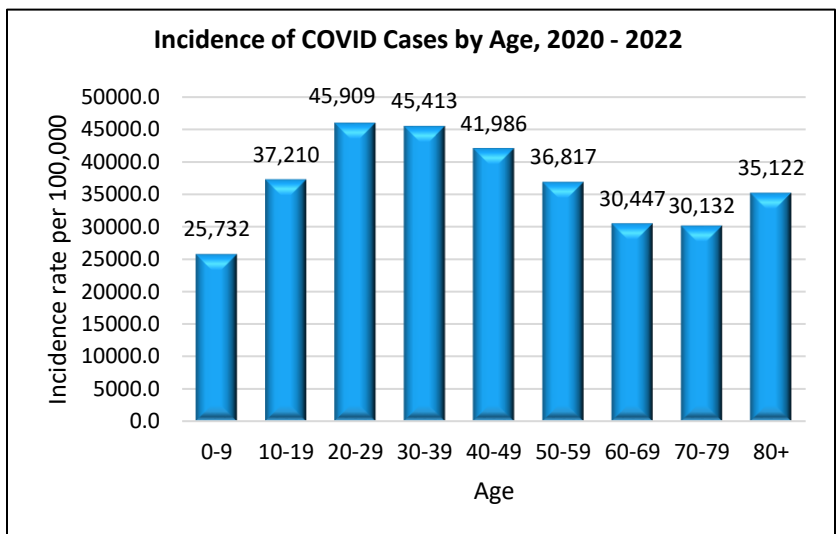
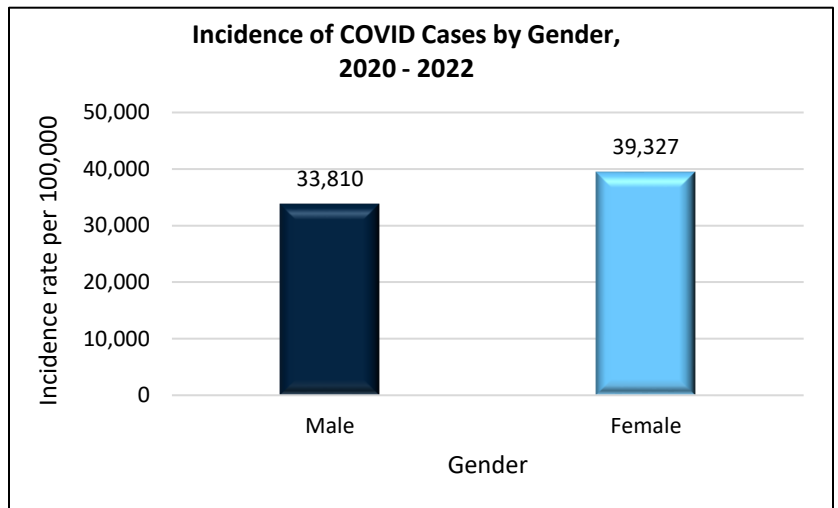
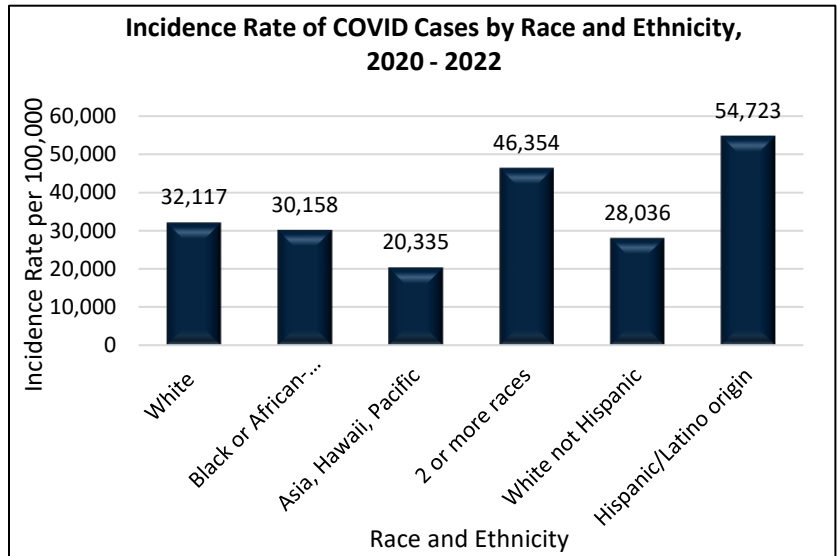
COVID Cases

Indicator: Number of COVID cases.

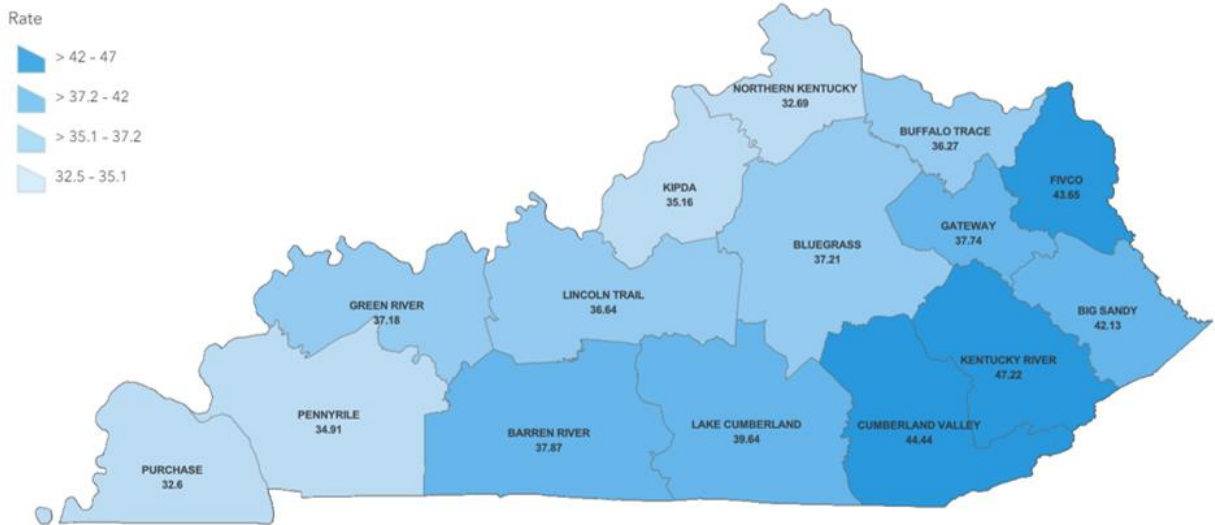
Who is at risk in Kentucky?

- 2022 had the highest rate of COVID-19 cases.
- Males (33.8) reported a lower incidence rate of COVID-19 cases than females (39.3).
- The incidence rate of COVID-19 cases by race and ethnicity was the highest in Hispanic/Latino origin (54.7) and two or more races (46.4).
- The incidence rate of COVID-19 cases by age was the lowest among 0-9 years of age (25.7) and the highest among 20-29 (45.9) and 30-39 (45.4) years.
- The Area Development District with the highest incidence rate of COVID-19 cases was Kentucky River, at an incidence rate of 47.2.

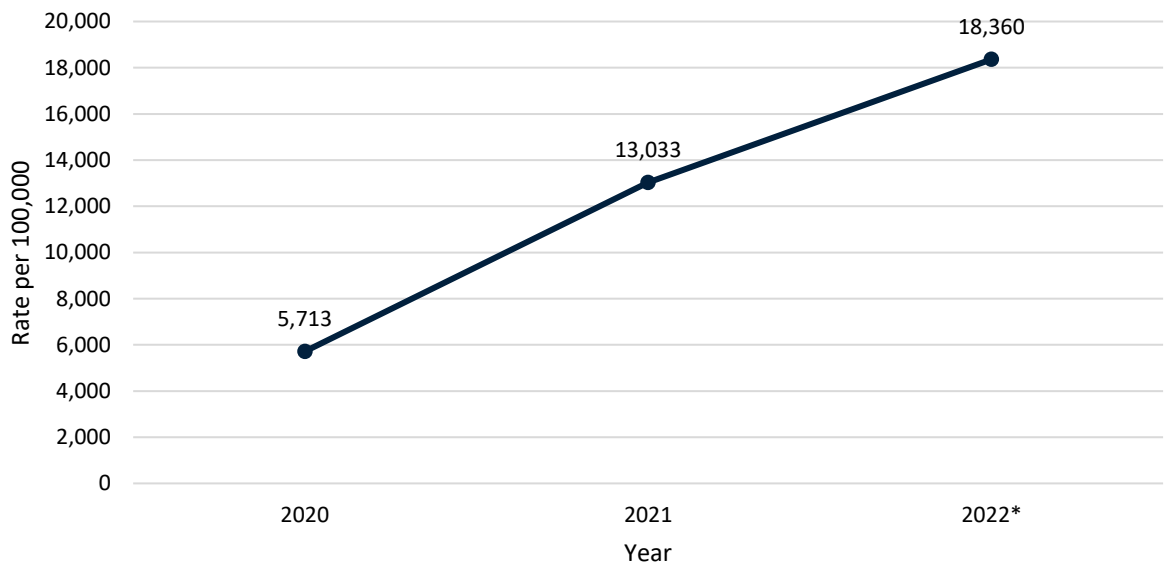
* Primary data source: COVID-19 cases are reported to the Kentucky Department for Public Health (KDPH) through the national electronic disease surveillance system (NEDSS) and meet the Council of State and Territorial Epidemiologists criteria for a confirmed or probable case.



COVID-19 Incidence Rate per 1,000 by Area Development District, 2020 - 2022



Incidence of COVID Cases per Year, 2020 - 2022*



*2022 Data is preliminary and is subject to change

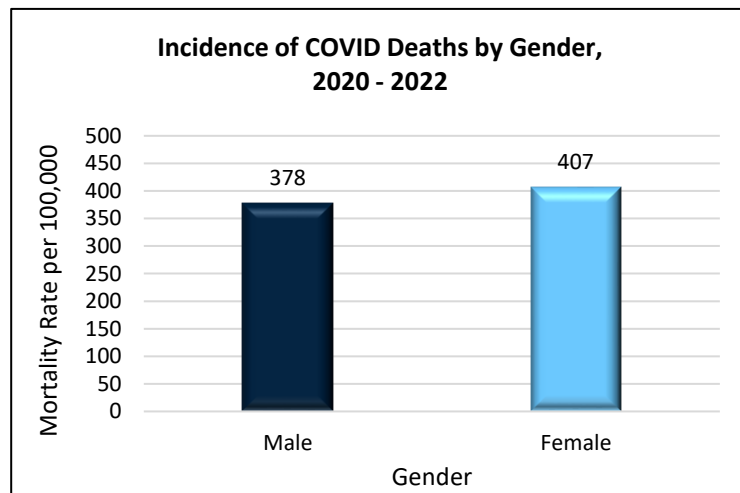
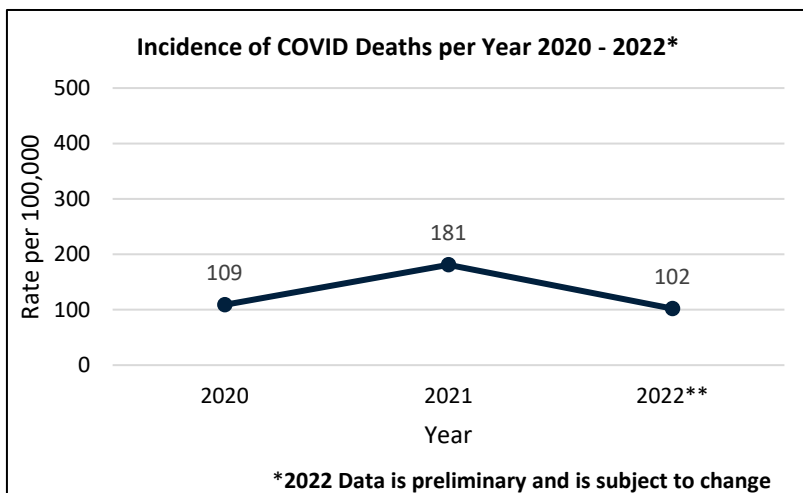
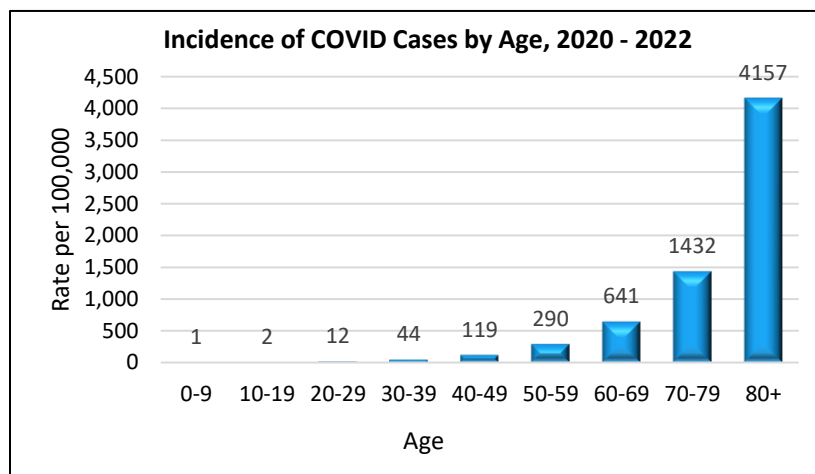
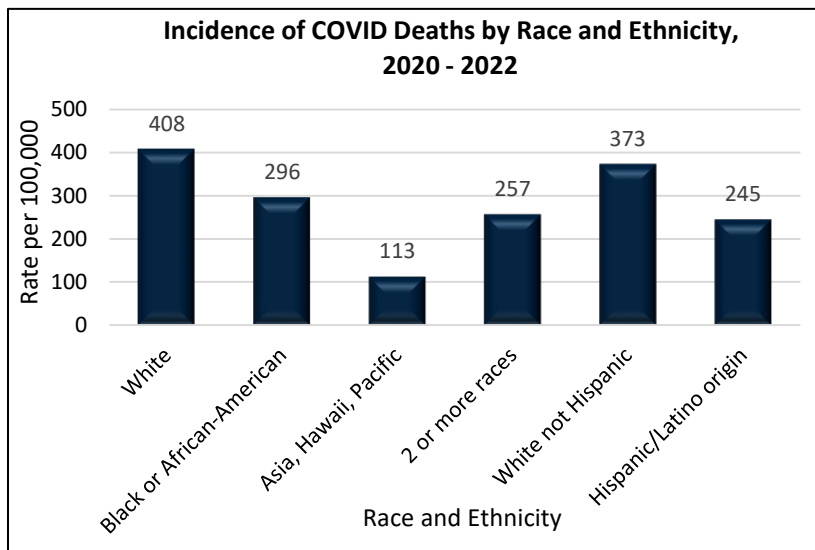


COVID Deaths

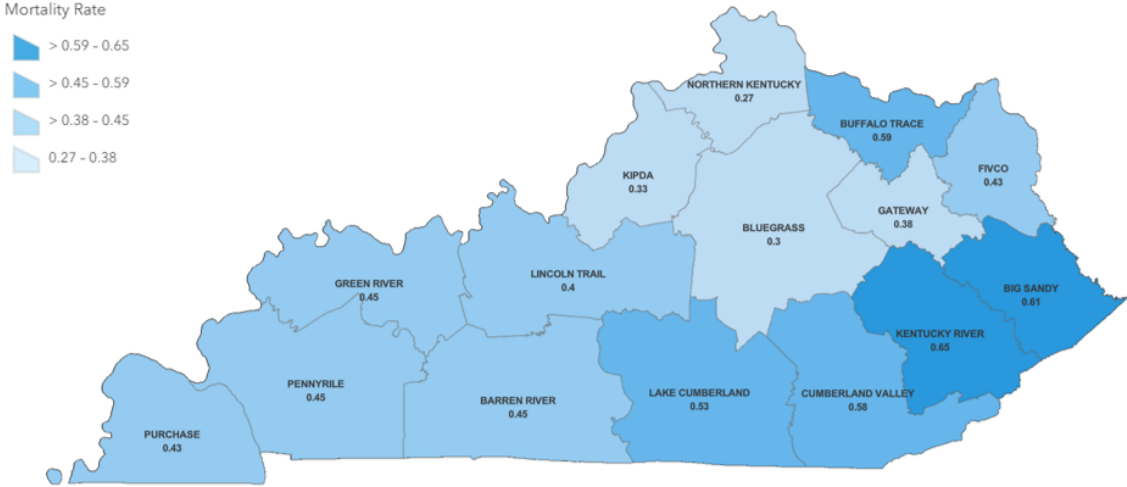
Indicator: Number of COVID deaths
Who is at risk in Kentucky?

- 2021 had the highest rate of COVID-19 deaths. In 2020, Kentucky had a case fatality rate of 1.0% compared to the US at 1.7%.
- Males (8,440) had a lower number of COVID-19 deaths than females (9,256).
- White Kentuckians (15,399) had a higher number of COVID-19 deaths than black Kentuckians (1,105).
- As would be expected, the number of COVID-19 deaths increased with age. The smallest prevalence was among children aged 0-9 years (5), and the highest prevalence was among those aged 80+ years (6,598).
- The Area Development District with the highest number of COVID-19 deaths was KIPDA at 3,369 deaths. The highest mortality rate of COVID-19 was in the Kentucky River ADD at 0.65/100,000, and the highest case fatality rate was in the Buffalo Trace ADD (1.62/100,000).

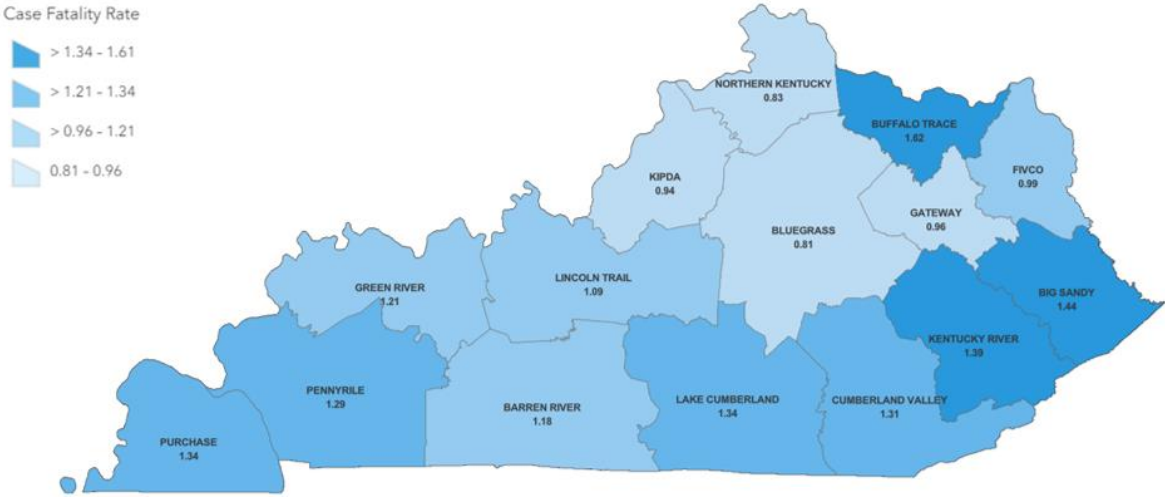
* Primary data source: Deaths where COVID-19 is a direct or contributing cause are identified through ongoing review of death certificate data from the Kentucky Office of Vital Statistics (OVS) and direct reports from local health departments and regional epidemiologists in Kentucky and meet the Council of State and Territorial Epidemiologists criteria for a confirmed or probable case.



COVID-19 Mortality Rate per 1,000 by Area Development District, 2020 – 2022



COVID-19 Case Fatality Rate per 1,000 by Area Development District, 2020 – 2022



Statewide Rate: 1.06

Diabetes

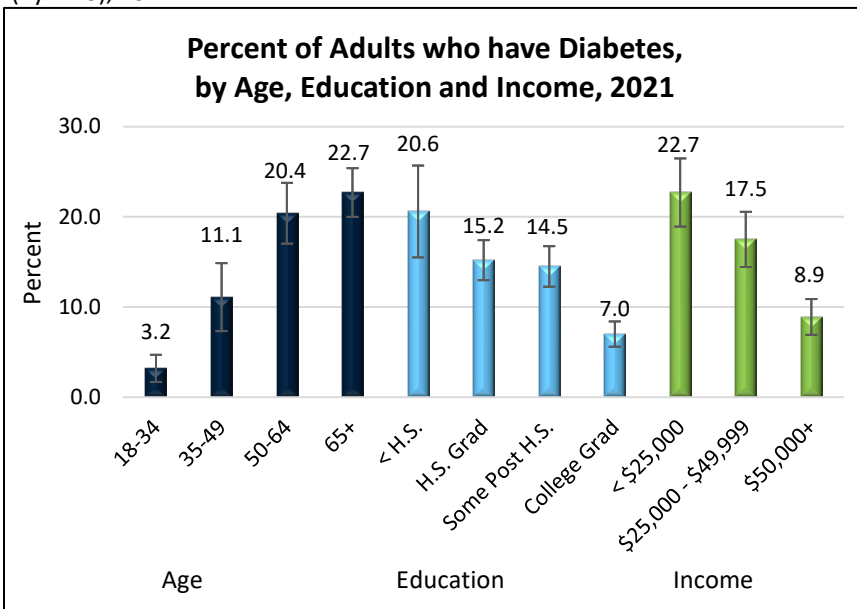
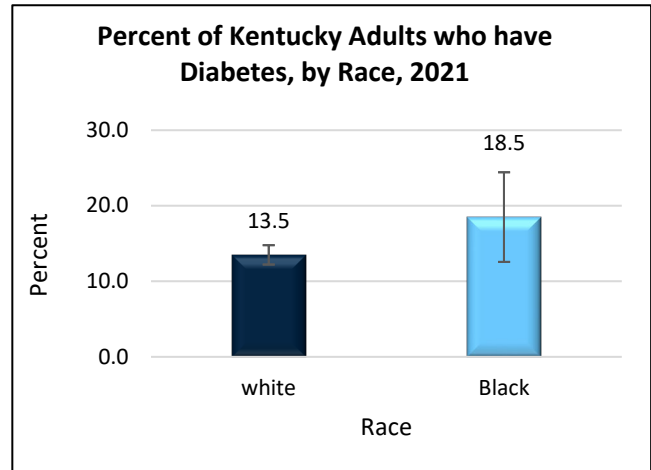
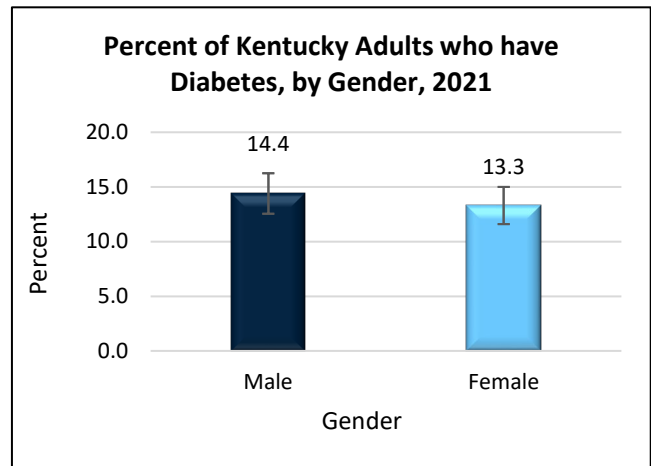
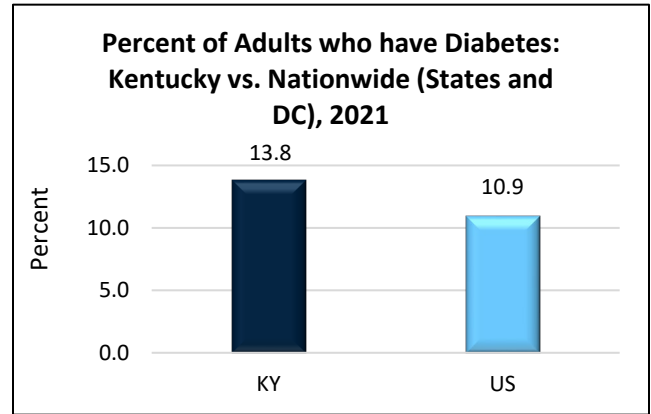
Question: Have you ever been told by a doctor, nurse or other health professional that you have diabetes?

At Risk: Adults who answered “Yes” are considered at risk. Those with responses for gestational diabetes, pre-diabetes or borderline diabetes are excluded. For more information about Diabetes in Kentucky, please see the 2023 [Diabetes Report](#).

Who is at risk in Kentucky?

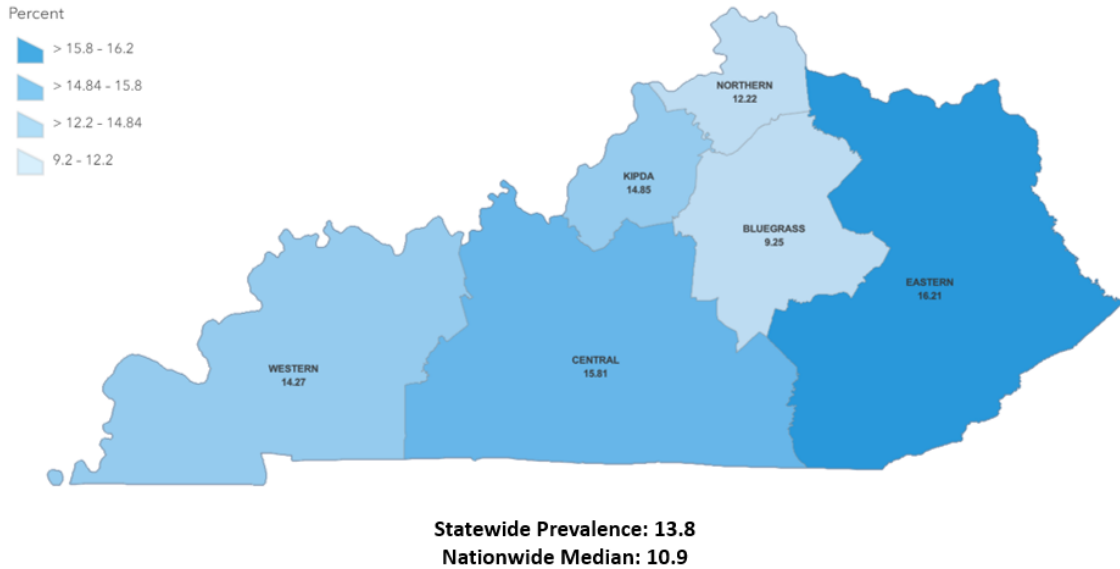
- About 13.8% of Kentucky adults reported ever being told by a doctor that they had diabetes, a higher prevalence compared to U.S. median prevalence (10.9%).
- Males (14.4%) reported a higher prevalence of diabetes than females (13.3%).
- The prevalence of diabetes was higher in Black Kentuckians (18.5%) than white Kentuckians (13.5%).
- The prevalence of diabetes increases with age. The highest prevalence was among adults aged 65 years or older.
- The prevalence of diabetes decreased as education level increased. Adults with less than a high school education (20.6%) reported a higher prevalence of diabetes than those with a college degree (7.0%).
- Adults with an annual household income of less than \$25,000 reported a higher prevalence of diabetes than those with household income of \$50,000 or more (22.7% vs. 8.9%).

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.

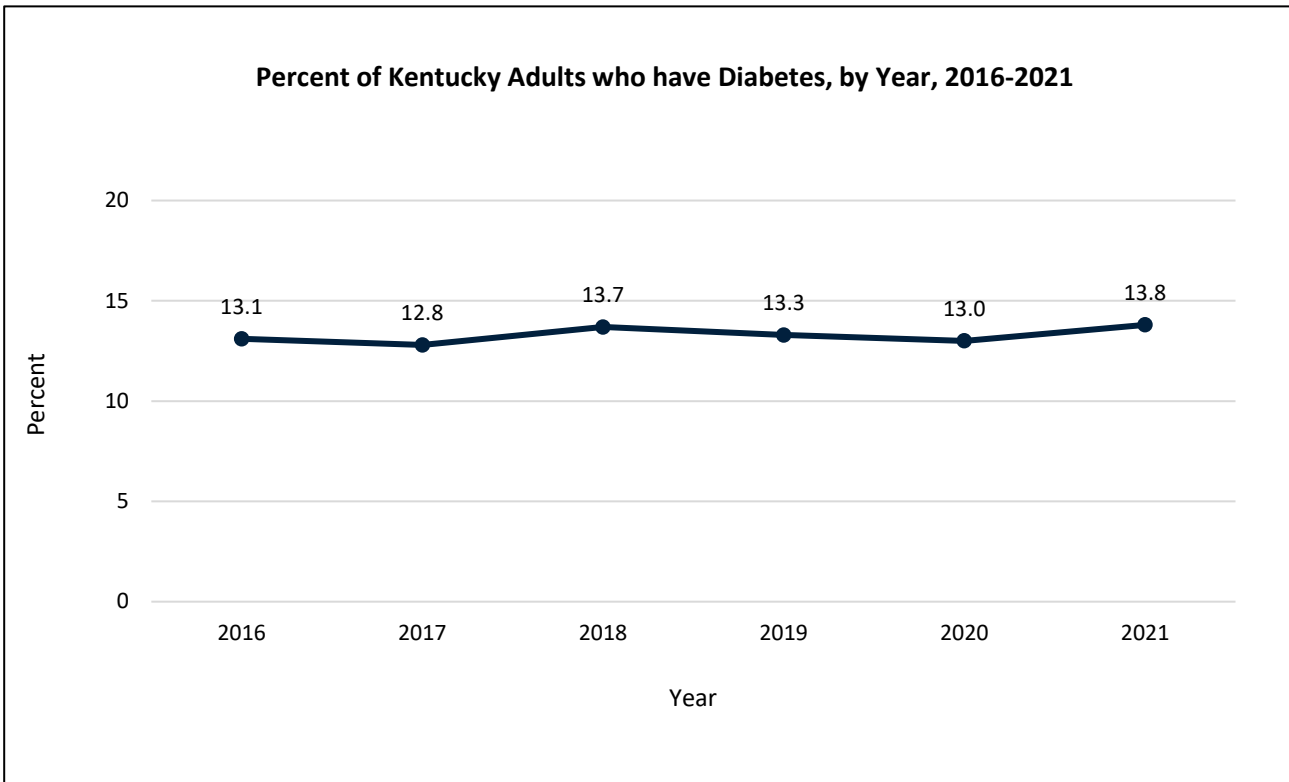


The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults who have Diabetes by Region, 2021



Percent of Kentucky Adults who have Diabetes, by Year, 2016-2021



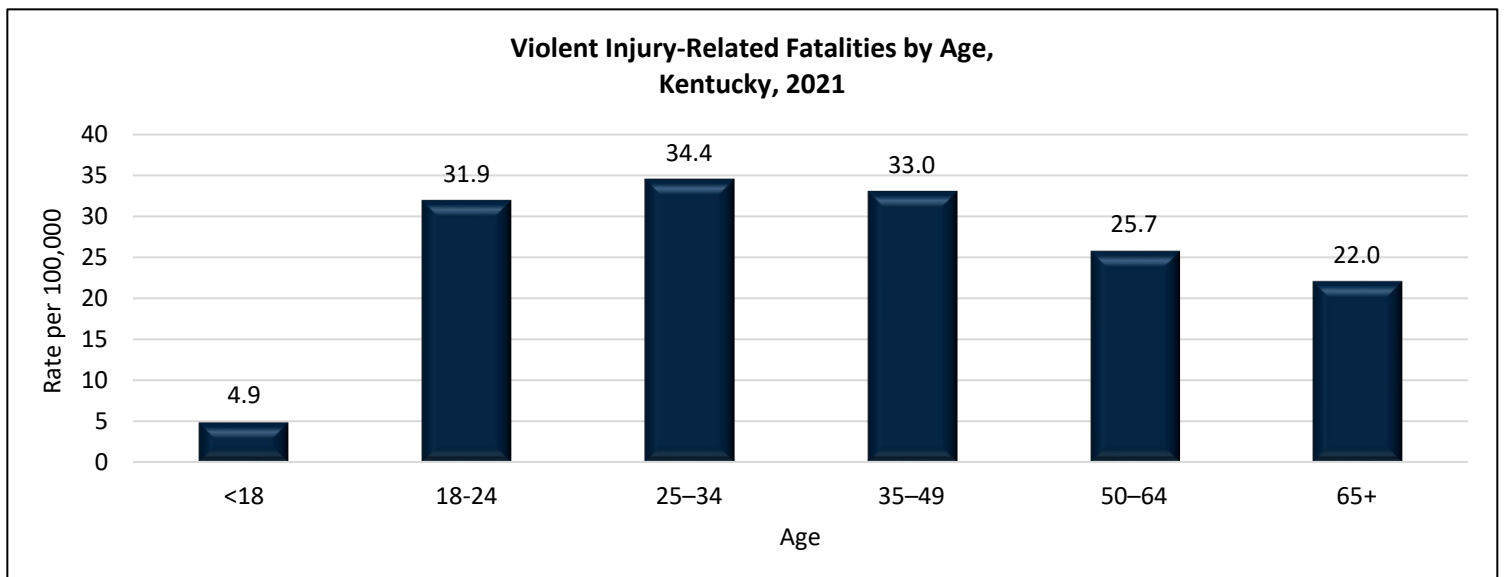
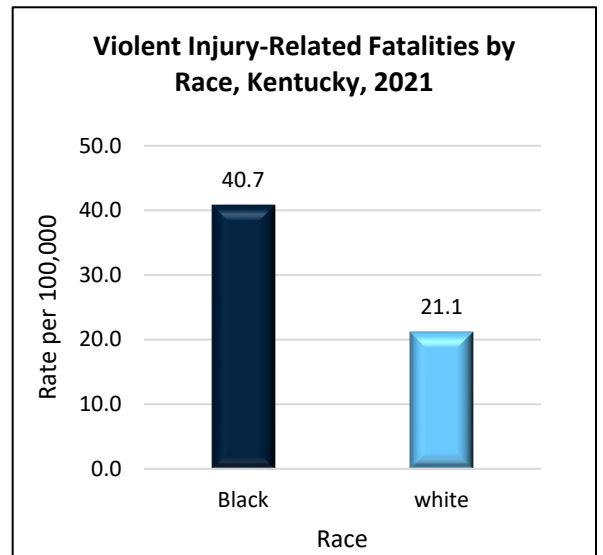
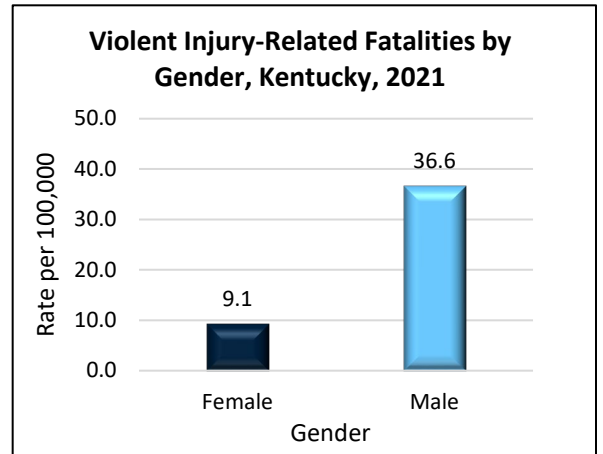
Violent Injury Deaths

Definition of Indicator: Violent injury-related fatalities in 2021.

Who is at risk in Kentucky?

- There was a total of 6,089 Kentuckians who had a violent injury-related death.
- Males had more violent injury-related fatalities than Females (4851 to 1238).
- Black Kentuckians had a higher rate of violent injury-related fatalities than white Kentuckians (40.7 to 21.1).
- The highest rate of deaths was at age 25-34 years old at 34.4.
- The highest rate of violent injury-related fatalities in 2021 was in the Kentucky River Area Development District at 29.7.

* Primary data source: Kentucky Injury Prevention and Research Center (KIPRC), 2021.



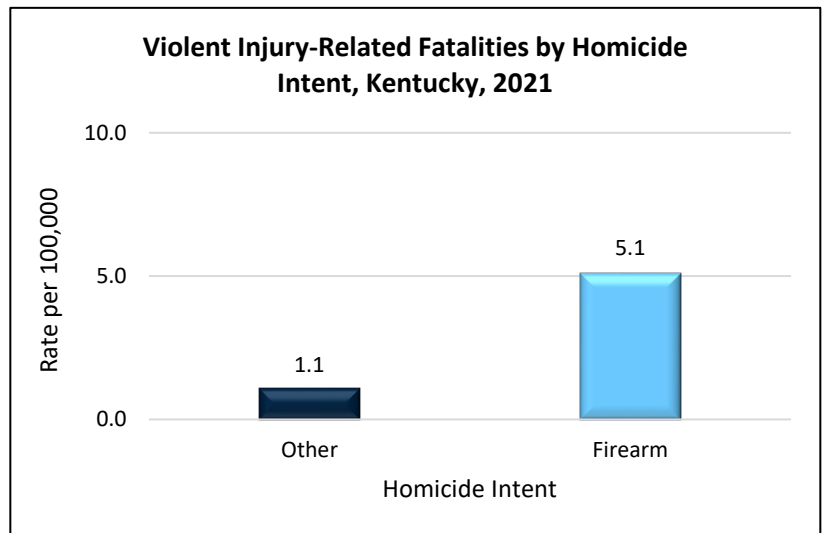
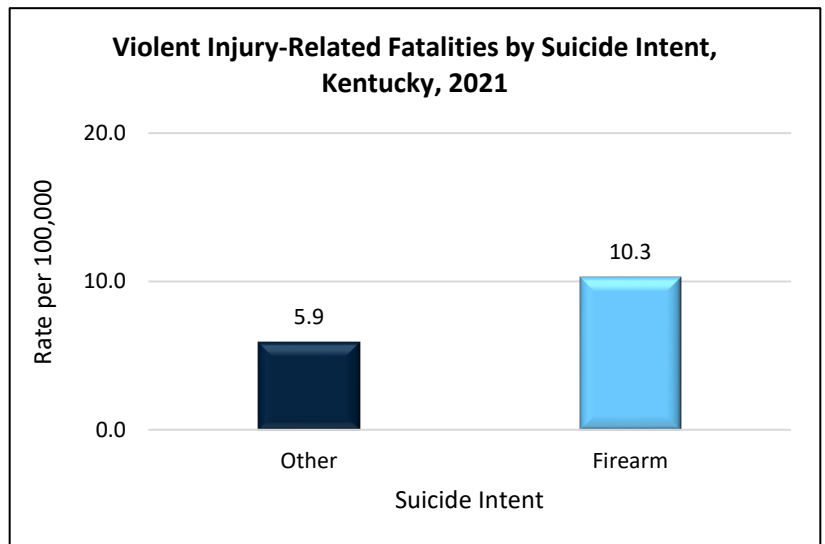
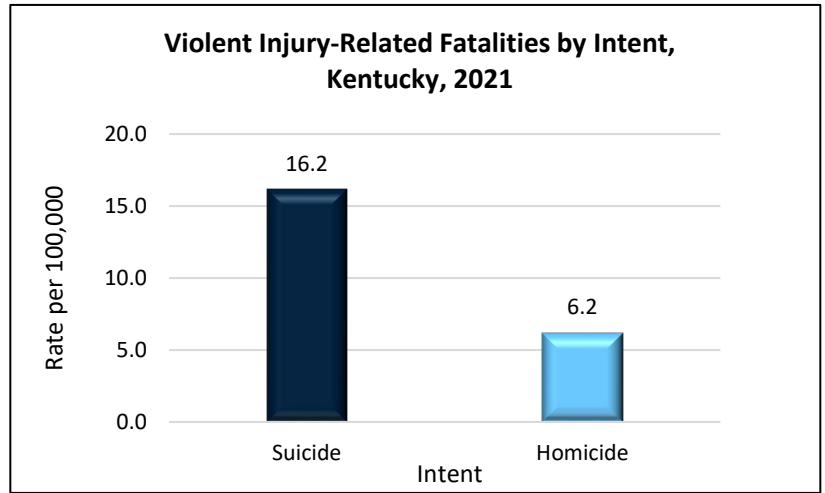
Violent Injury Death Types

Definition of Indicator: Violent injury-related fatalities by intent in 2021.

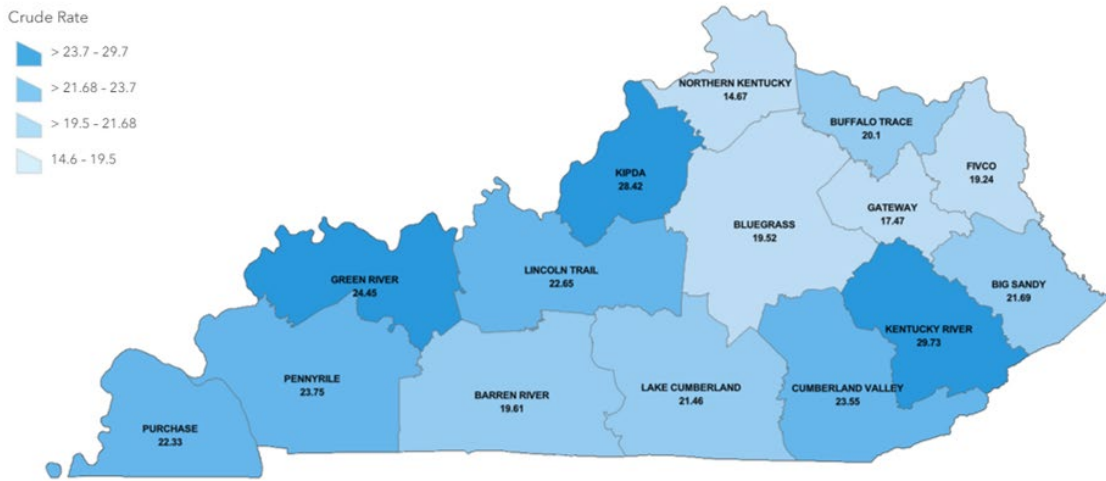
Who is at risk in Kentucky?

- There were more than twice as many suicide fatalities (16.2 rate per 100,000) than homicide fatalities (6.2 rate per 100,000).
- The rate of suicide deaths was higher in Kentucky (16.2) than in the U.S. (14.5).
- The rate of homicide deaths was lower in Kentucky (6.2) than in the U.S. (7.8).
- In Kentucky, there was a rate of 10.3 per 100,000 suicide fatalities from firearms. In comparison, there was a rate of 5.9 per 100,000 suicide fatalities from other intents.
- In Kentucky, there was a rate of 5.1 per 100,000 homicide fatalities from firearms. In comparison there was a rate of 1.1 per 100,000 homicide fatalities from other intents.

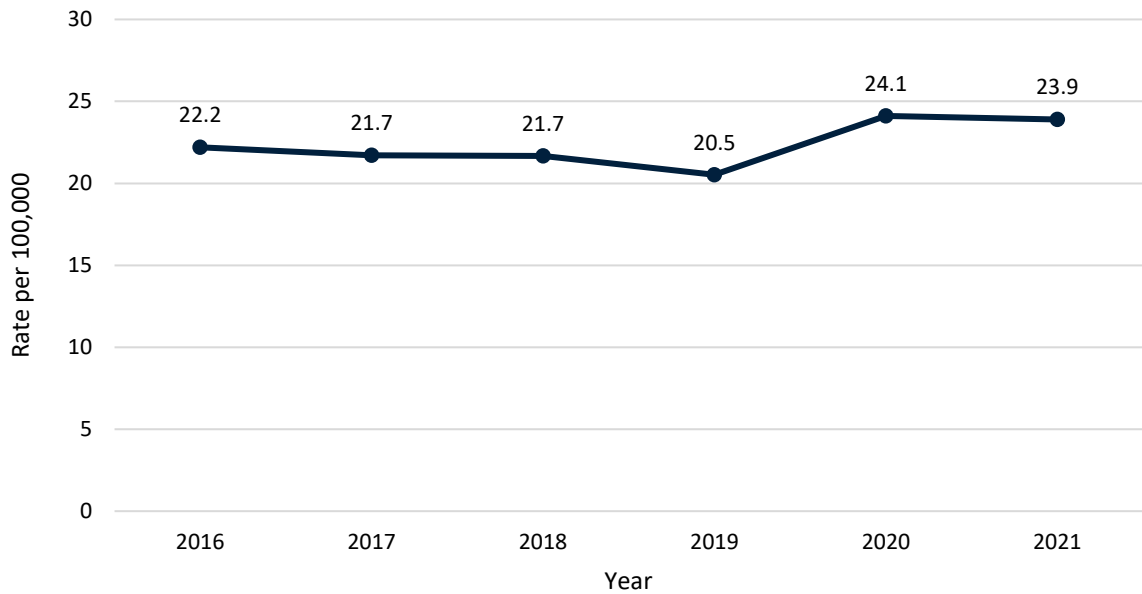
* Primary data source: Kentucky Injury Prevention and Research Center (KIPRC), 2021.



Violent Injury-Related Fatalities by Area Development District, 2021



Violent Injury-Related Fatalities by Year, Kentucky, 2016-2021

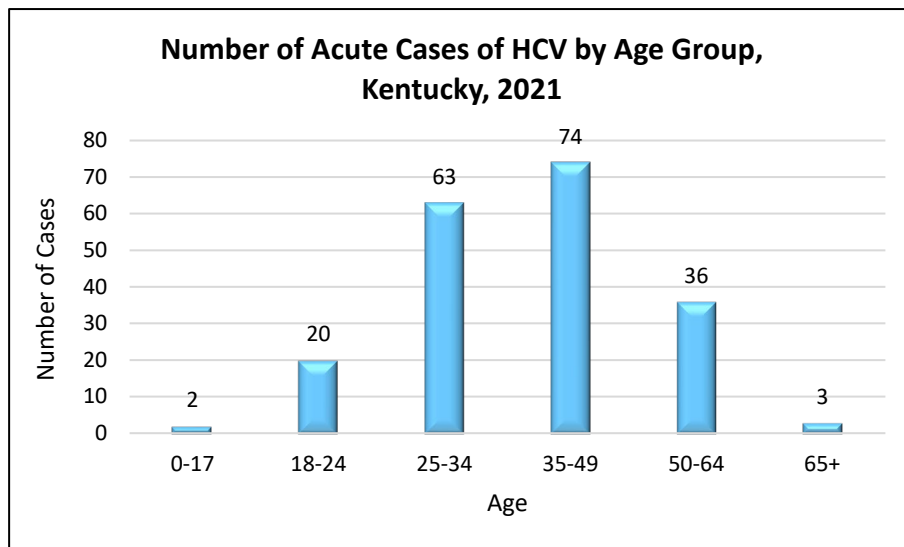
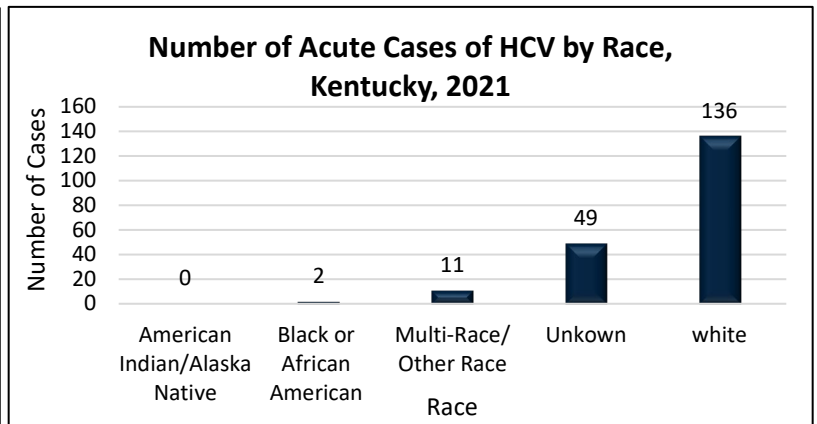
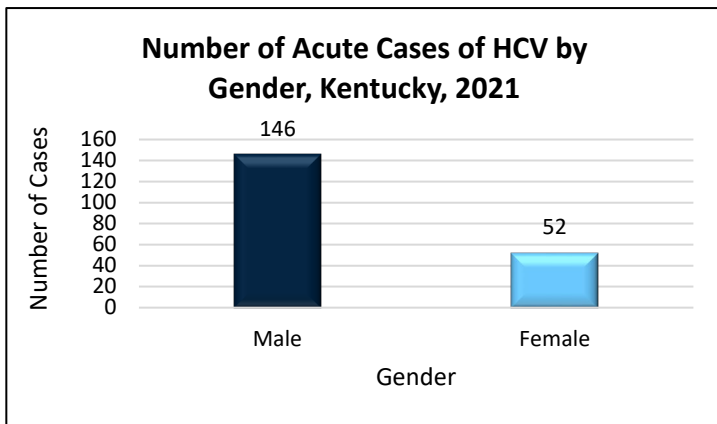


Hepatitis C Virus (HCV)

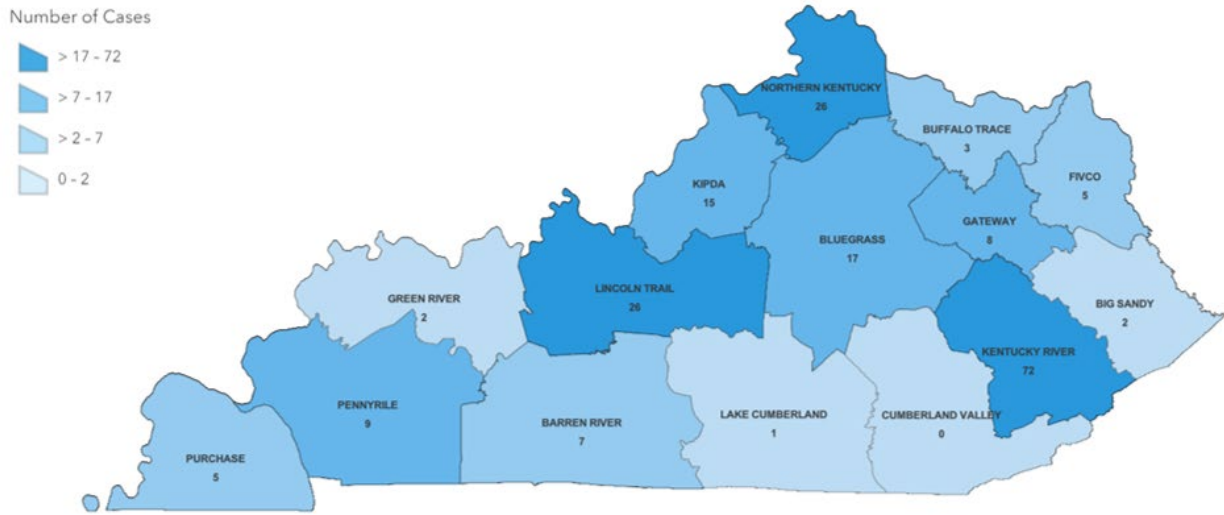
Definition of Indicator: Those Kentuckians diagnosed with acute Hepatitis C (HCV).
Who is at risk in Kentucky?

- In 2021, Kentucky (4.4) had a higher rate per 100,000 of HCV infections than the U.S. (1.6).
- Kentucky had a total of 198 cases of HCV infection in 2021.
- Males represented 74% of the acute HCV infections, while females represented 26% in 2021.
- Most HCV cases in Kentucky in 2021 were among white individuals (136 cases at 69%).
- Nearly all new cases of HCV in 2021 were <64 years old (98%), with the greatest burden among the 35–49-year age group (37%).
- The highest number of HCV infections occurred in the Kentucky River Area Development District at 72 cases.
- Overall, there was an increase in acute HCV cases in Kentucky from 2019 to 2021.

* Primary data source: Reportable Disease Section in the Division of Epidemiology and Health Planning at the KDPH.

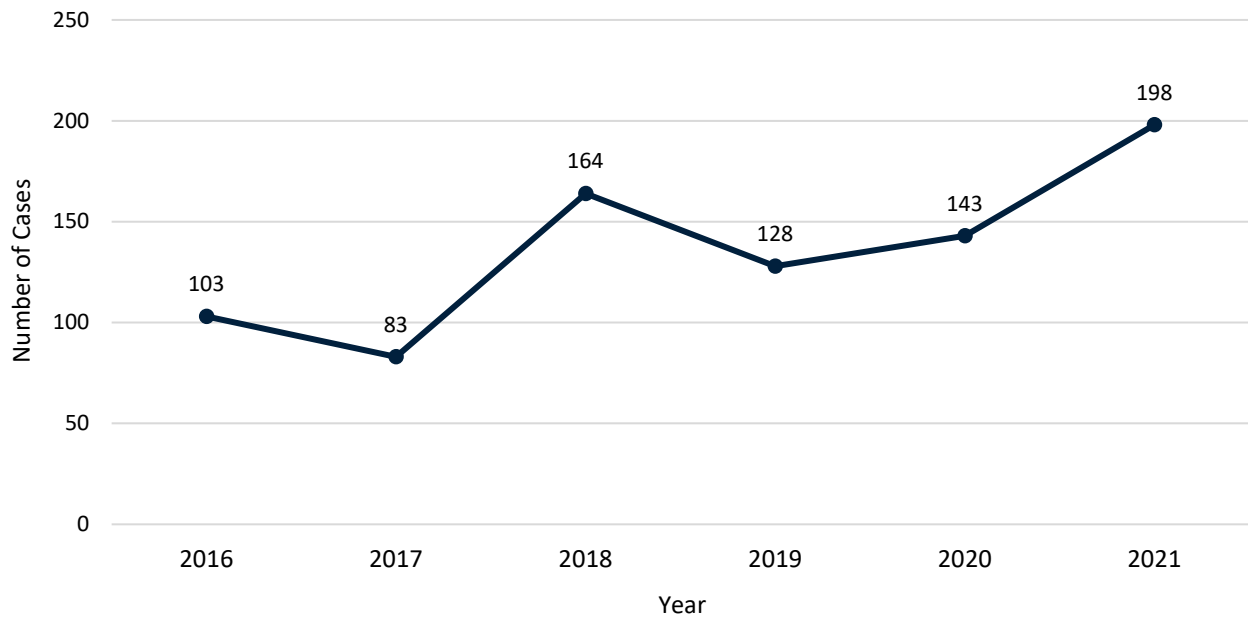


Number of Acute Cases of HCV by Area Development District, 2021



Statewide Cases: 198

Number of Acute Cases of HCV, Kentucky, 2016-2021



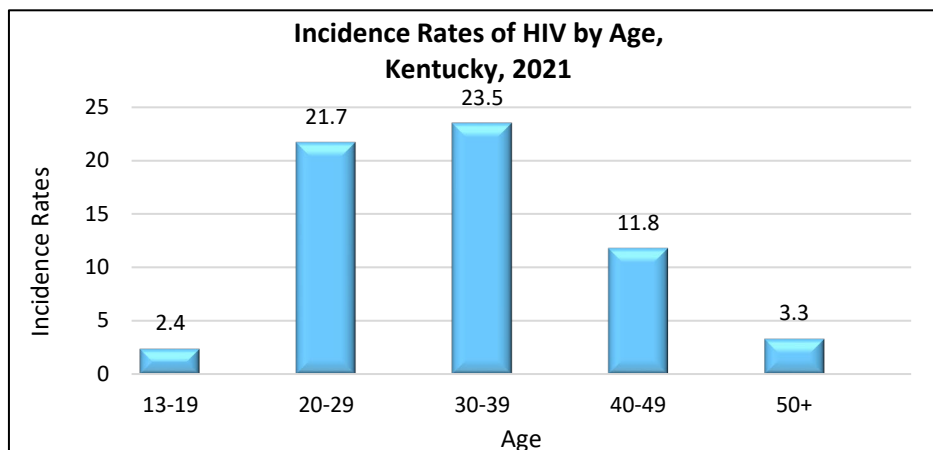
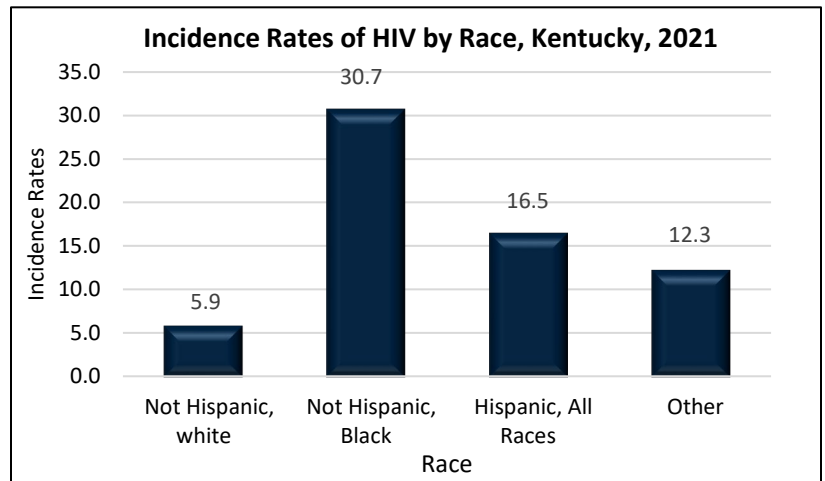
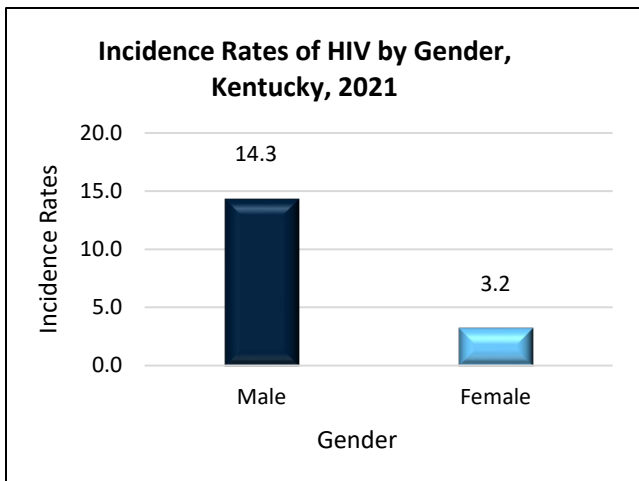
Human Immunodeficiency Virus (HIV)

Definition of Indicator: HIV disease refers to cases diagnosed with HIV, regardless of progression to AIDS.
Who is at risk in Kentucky?

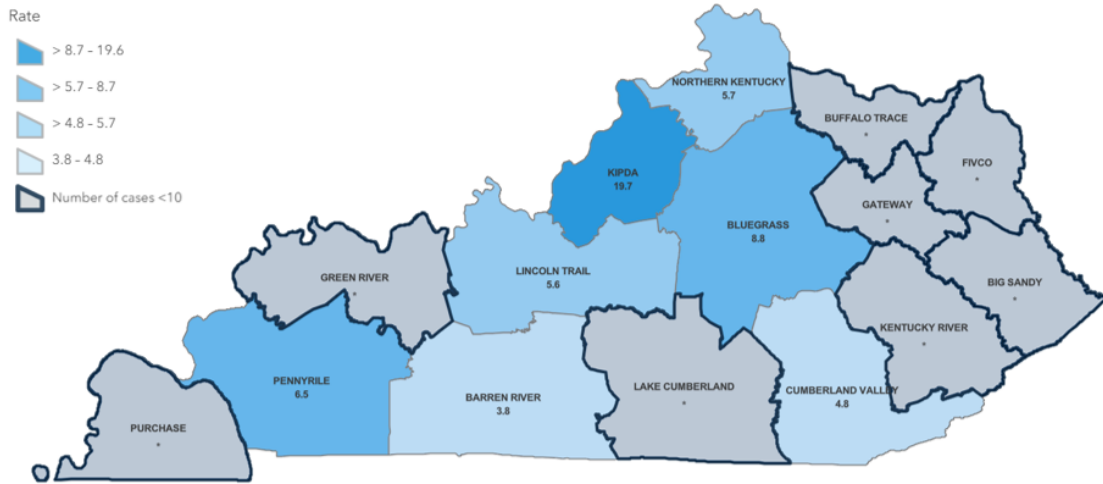
- In 2021, Kentucky (8.6) had a lower HIV rate per 100,000 population than the U.S. (10.8) per CDC.
- HIV infections in Kentucky occur in males over females at a 5:1 ratio.
- The rate of HIV infection in Kentucky is highest among 30–39-year-olds (23.5/100,000).
- The greatest number of new HIV cases are identified in non-Hispanic white individuals (224 cases). Still the highest rate of infection is in non-Hispanic Black individuals (116 cases).
- The primary mode of HIV transmission identified in Kentucky is through male-to-male sexual contact.
- The three probable reasons for the increase in HIV rates from 2020 to 2021 include new stakeholders started testing in Kentucky (Kentucky Income Reinvestment Program [KIRP]), a cluster among the persons who inject drugs (PWID) population in Jefferson County, Kentucky, and decrease in new diagnosis during COVID in 2020 with a bounce back in 2021.

* Primary data source: HIV program data in the Division of Epidemiology and Health Planning at KDPH.

Note: The CDC uses different methodologies thereby making various adjustments to calculate the HIV incidence rates. Therefore, incidence rates calculated by CDC are 8.6 (based on 390 diagnoses) vs 8.7 calculated by Kentucky HIV Surveillance (based on 393 new diagnoses).



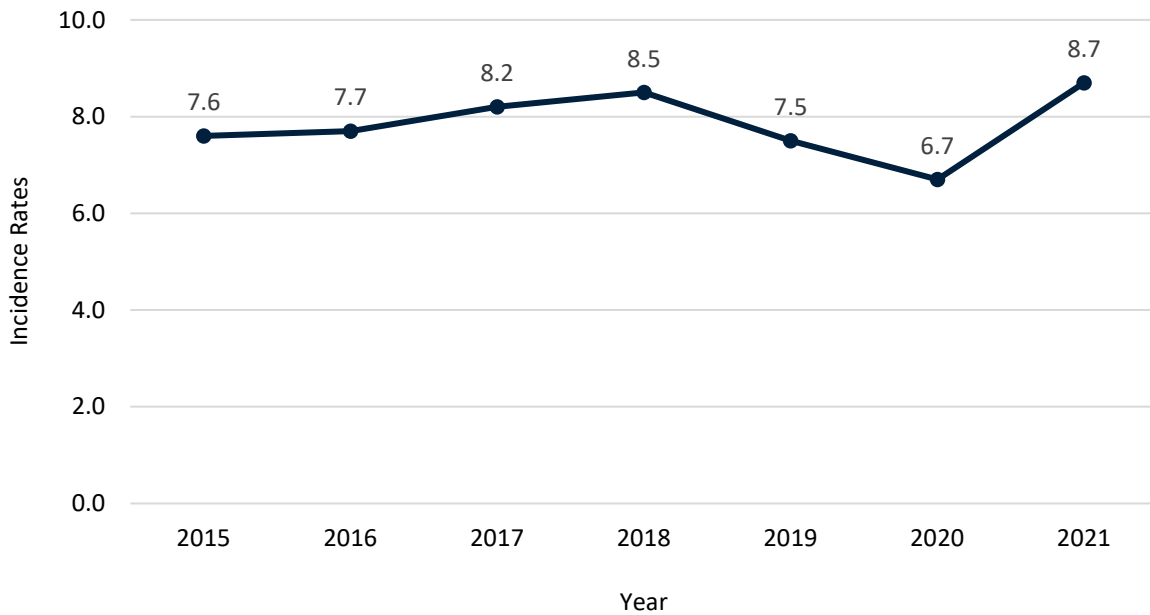
HIV Incidence Rate per 100,000 by Area Development District, 2021



Statewide Incidence Rate: 8.7

*Rates are not calculated when the numerator is less than 10 per the HIV Data Security and Confidentiality policy.

HIV Incidence Rates per 100,000, Kentucky, 2015-2021



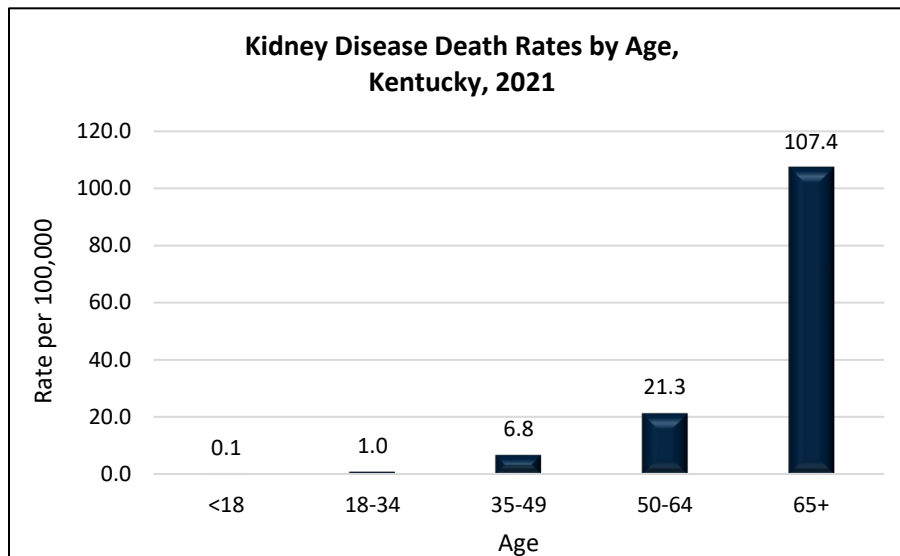
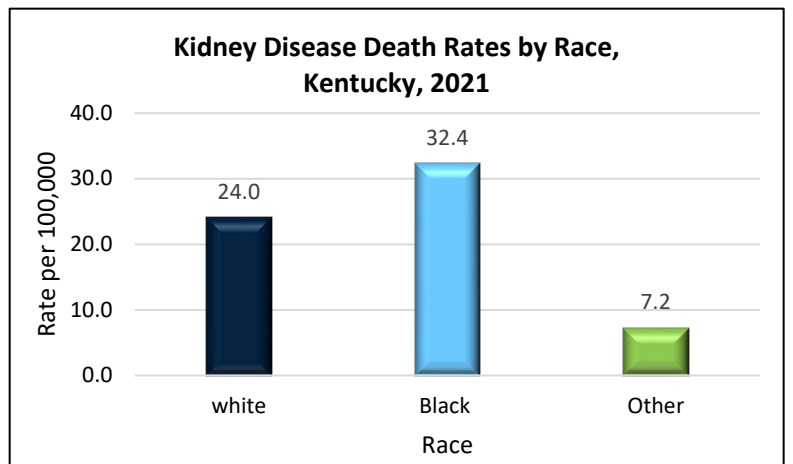
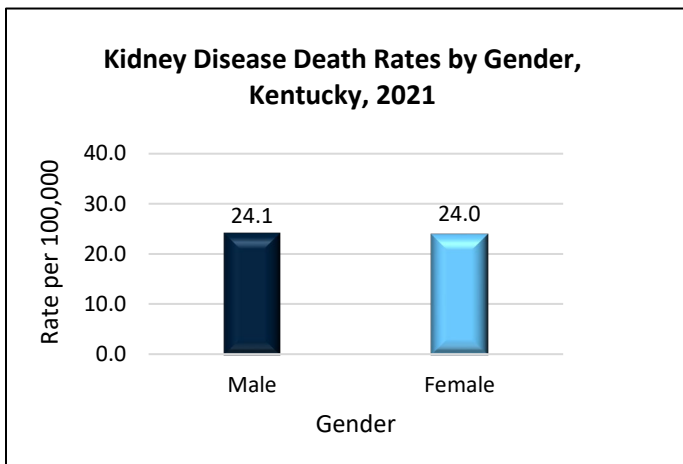
Kidney Disease

Definition of Indicator: Kidney disease deaths due to nephritis, nephrotic syndrome and nephrosis.

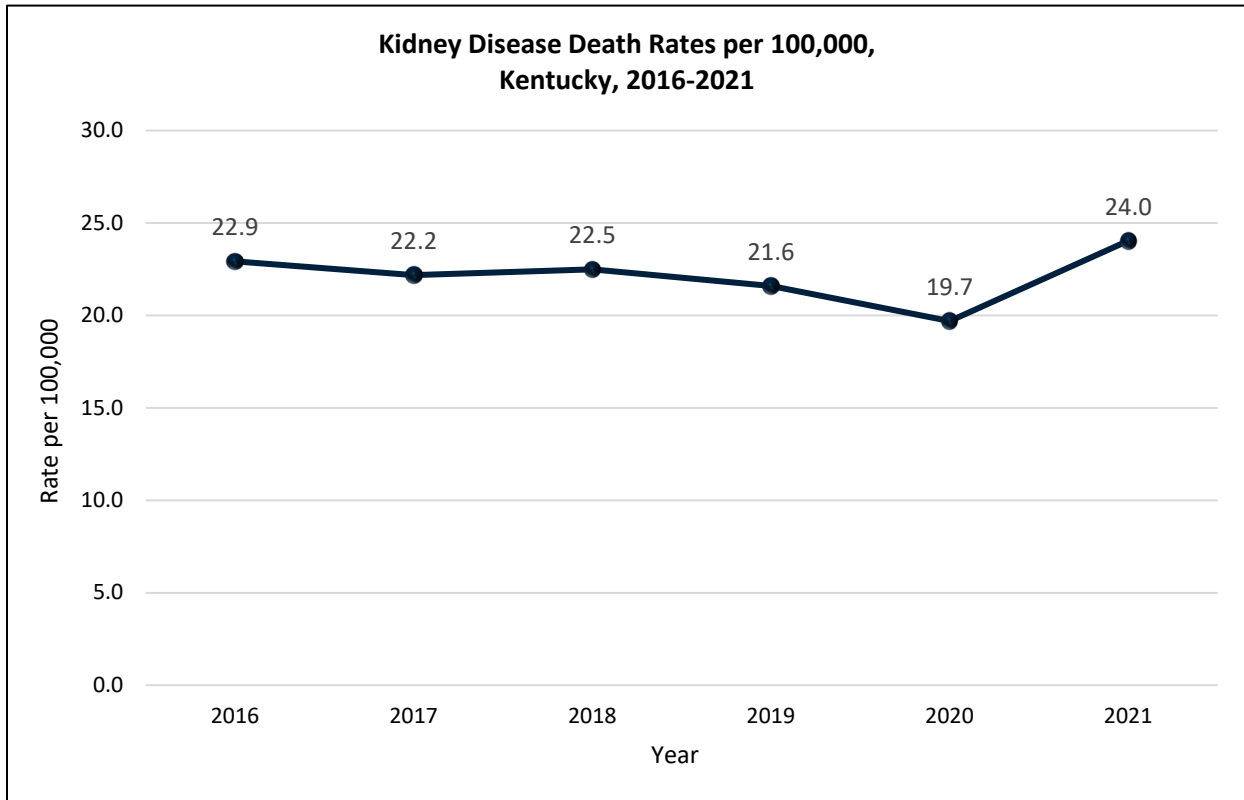
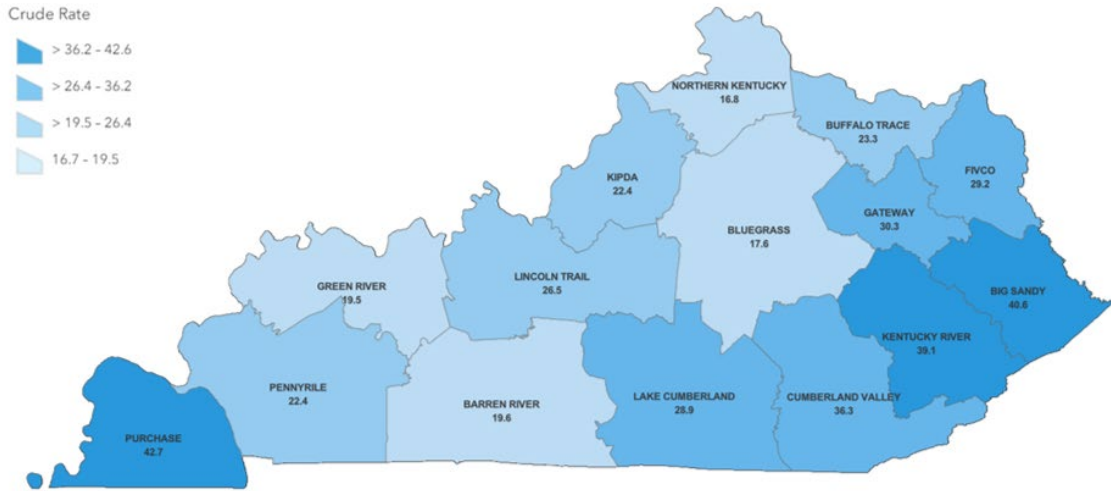
Who is at risk in Kentucky?

- The kidney disease death rate is higher in Kentucky (24.0) than in the U.S. (16.4).
- Kidney disease deaths by race were highest among Black Kentuckians, with a crude rate of 32.4 (126/389,241).
- The greatest number of kidney disease deaths is in males at 24.1 while females are at 24.0 (rate per 100,000).
- In 2021, Kentuckians aged 65 years and older had the highest rate of kidney disease deaths at 107.4 (827/770,260).
- One viable reason that kidney disease deaths increased from 2020 to 2021 was COVID. In 2020, people with chronic conditions likely delayed seeking care, so these might have progressed further before diagnosis, leading to increased mortality rates in 2021.

* Primary data source: Kentucky Office of Vital Statistics 2021.



Kidney Disease Deaths by Area Development District, 2021



Obesity

Question: Body Mass Index (BMI) was calculated based on data collected from:

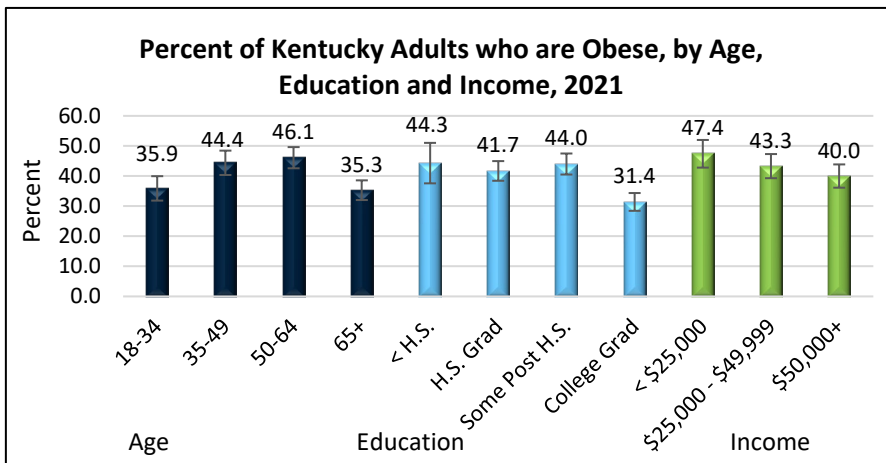
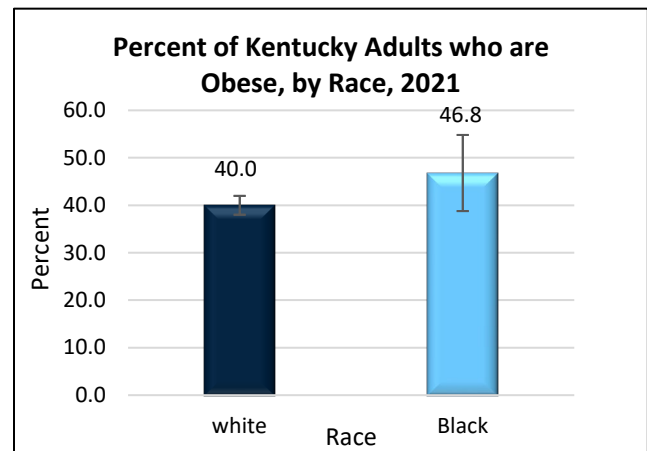
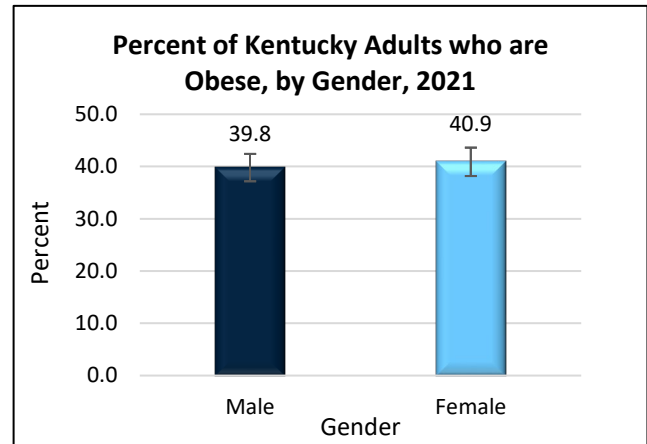
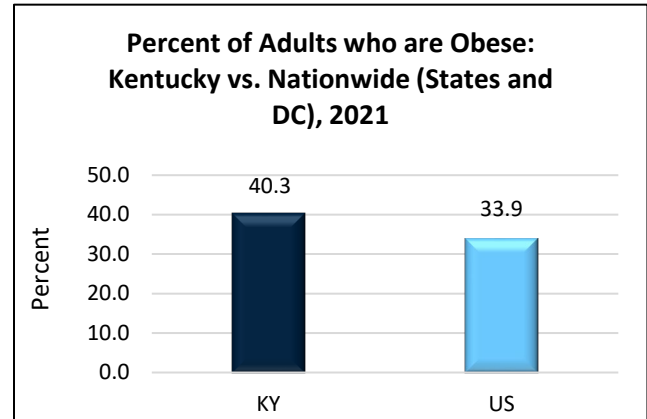
- 1) How much do you weigh without shoes?
- 2) How tall are you without shoes?

At Risk: Adults with BMI scores greater or equal to 30.0 are considered obese.

Who is at risk in Kentucky?

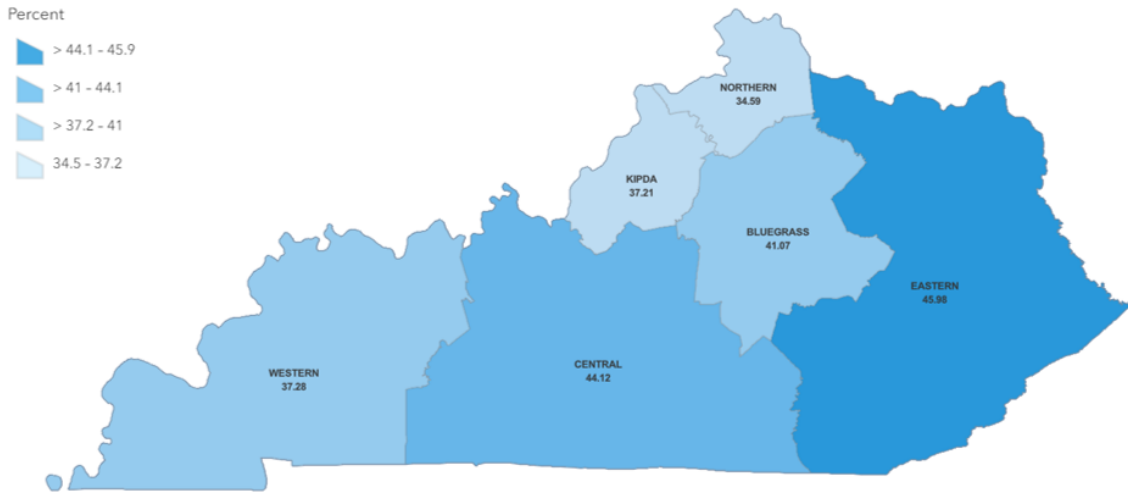
- In 2021, an estimated 40.3% of Kentucky adults were classified as being obese (BMI \geq 30.0), which is higher than the U.S. median prevalence of 33.9%. Kentucky is ranked 2nd overall (40.3) for self-reported obesity among U.S. adults by state and territory.
- The prevalence of obesity was higher among women than men (40.9% vs. 39.8%). The prevalence of obesity among Black adults (46.8%) was higher among white adults (40.0%).
- The prevalence of obesity was higher among adults aged 50-64 years (46.1%) and older adults aged 35-49 (44.4%) than young adults aged 18-34 years (35.9%) and adults 65 years and older (35.3%).
- The prevalence of obesity fluctuated for those in high school (H.S., 44.3%), H.S. graduates (41.7%), and some post H.S. (44.0%) and was the lowest among college graduates at 31.4% by education level.
- The prevalence of obesity was higher among adults with less than \$25,000 than those with household incomes of \$50,000 or more (47.4% vs. 40.0%).

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



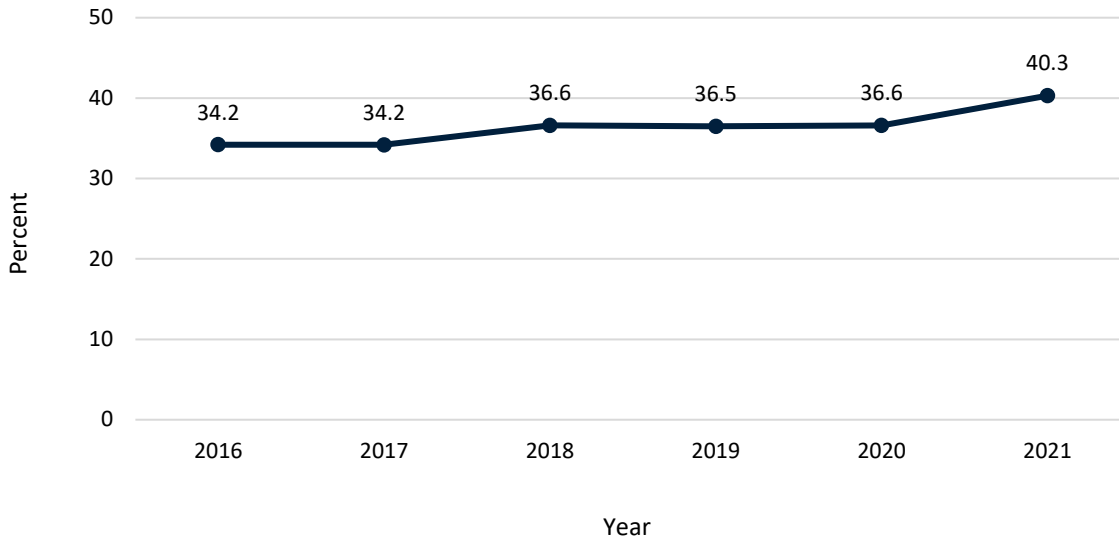
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults who are Obese by Region, 2021



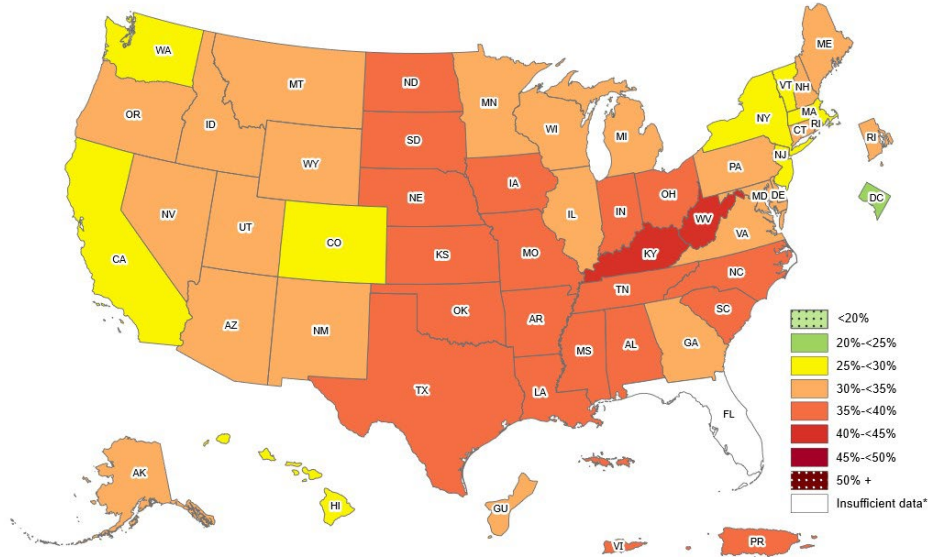
Statewide Prevalence: 40.3
 Nationwide Median: 33.9

Percent of Kentucky Adults who are Obese, by Year, 2016-2021



Prevalence¹ of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2021

¹Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



*Sample size <50, the relative standard error (dividing the standard error by the prevalence) ≥30%, or no data in a specific year.



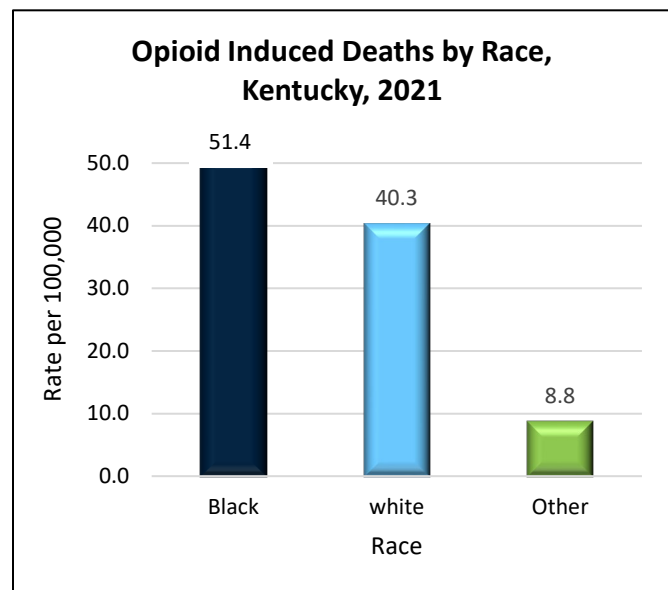
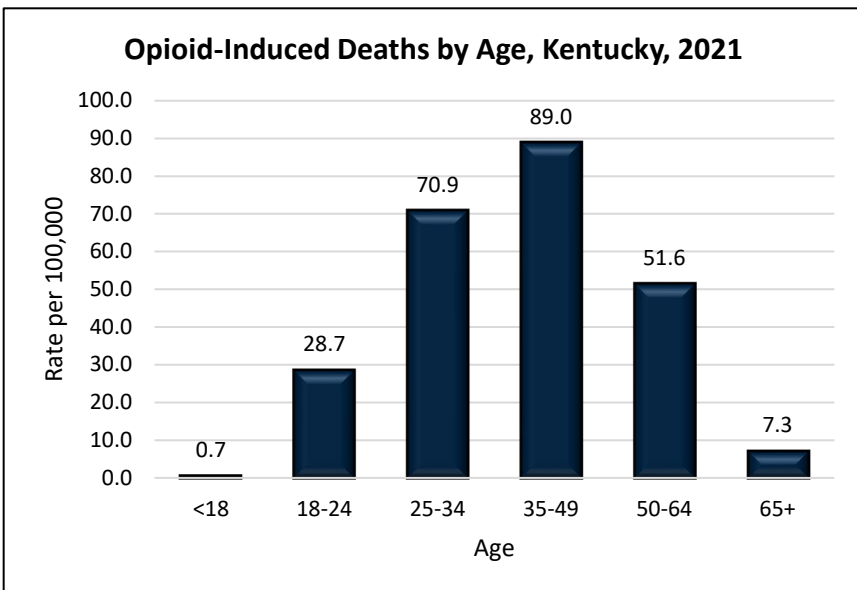
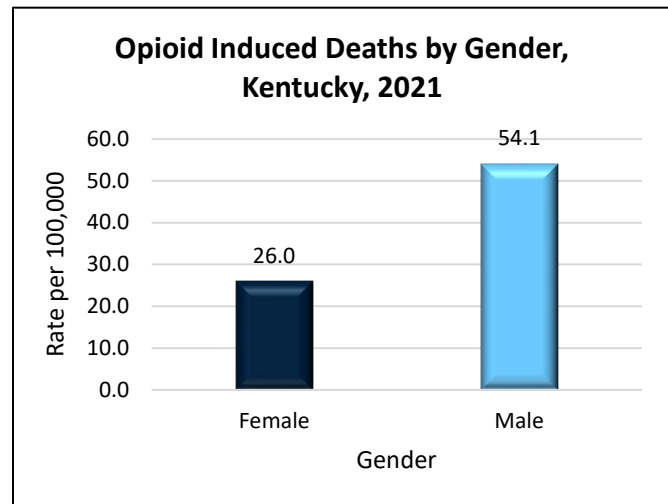
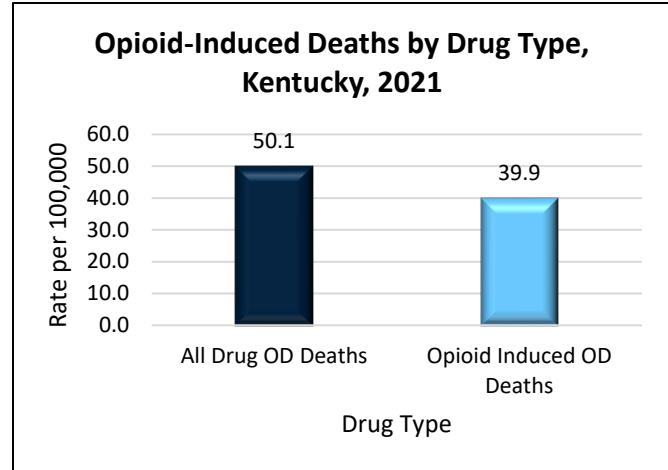
Opioid Induced Deaths

Definition of Indicator: Drug overdose deaths were identified as deaths with an underlying cause of death in the following ICD-10 code range: X40-X44 (accidental/unintentional drug poisoning), X60-X64 (suicide by drug poisoning), X85 (homicide by drug poisoning) and Y10-Y14 (drug poisoning with undetermined intent). Additionally, opioid deaths are identified by a code in the T40.1-T40.4 range in any multiple cause of death field.

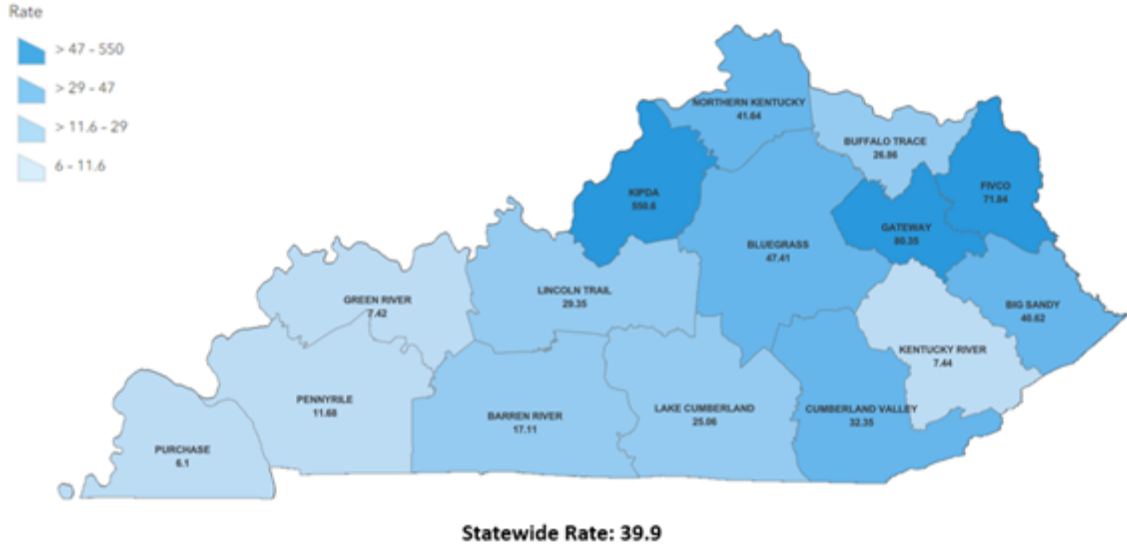
Who is at risk in Kentucky?

- In 2021, Kentucky (39.9 per 100,000) had a higher opioid-induced death rate than the U.S. (28.1 per 100,000).
- The Area Development District with the highest opioid-induced deaths rate per 100,000 was in the KIPDA ADD with 550.6.
- In 2021, Kentucky had the highest opioid-induced deaths rate per 100,000 at 39.9.
- More male Kentuckians (54.1 rate per 100,000) died from opioids than female Kentuckians (26.0 rate per 100,000).
- Black Kentuckians had a higher rate (51.4) of opioid induced deaths than white Kentuckians (40.3).
- Kentuckians between the ages of 35-49 (rate of 89.0 per 100,000) were among the highest opioid-induced deaths while ages less than 18 (rate of 0.7 per 100,000) were among the lowest opioid-induced deaths.

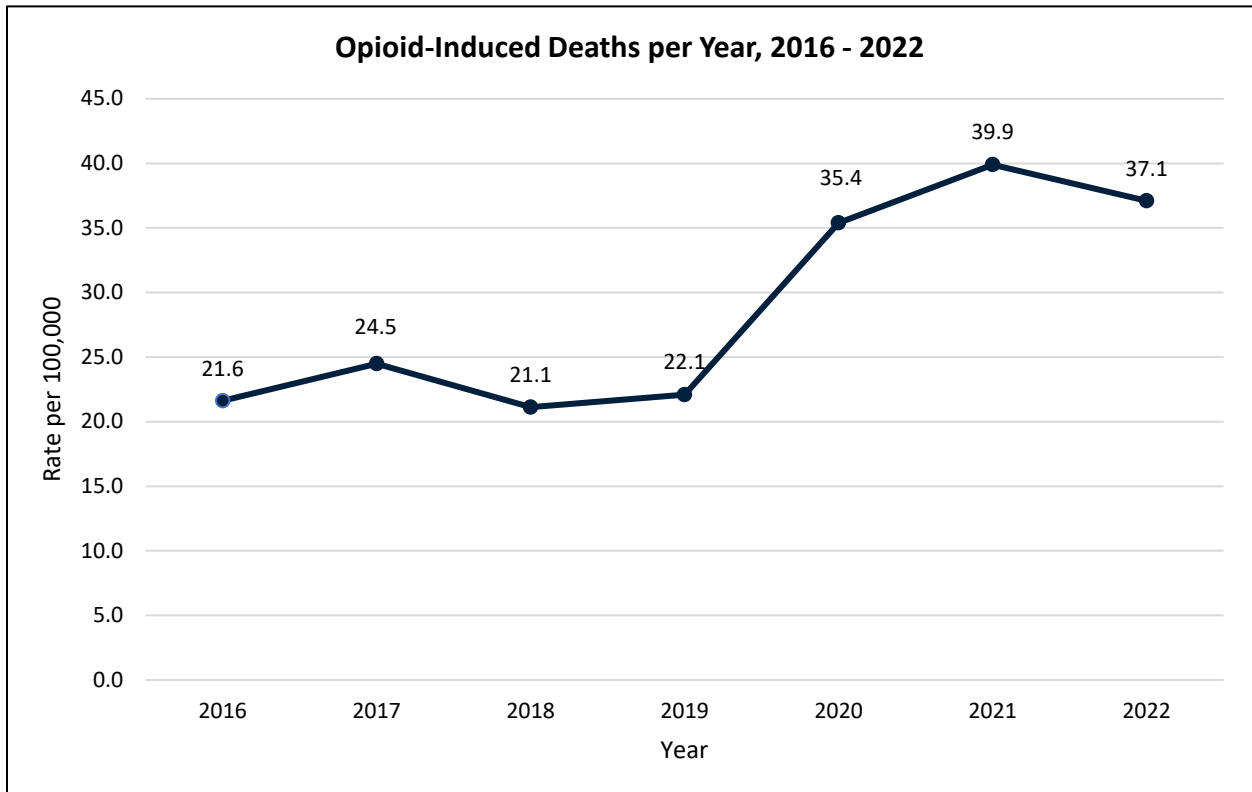
* Primary data source: Kentucky Injury Prevention and Research Center, 2016-2021.



Opioid Induced Deaths per 100,000 by Area Development District, 2021



Opioid-Induced Deaths per Year, 2016 - 2022

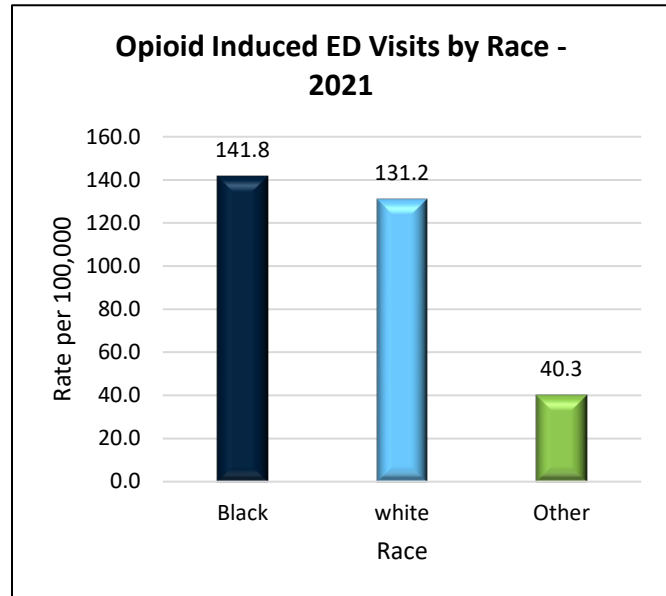
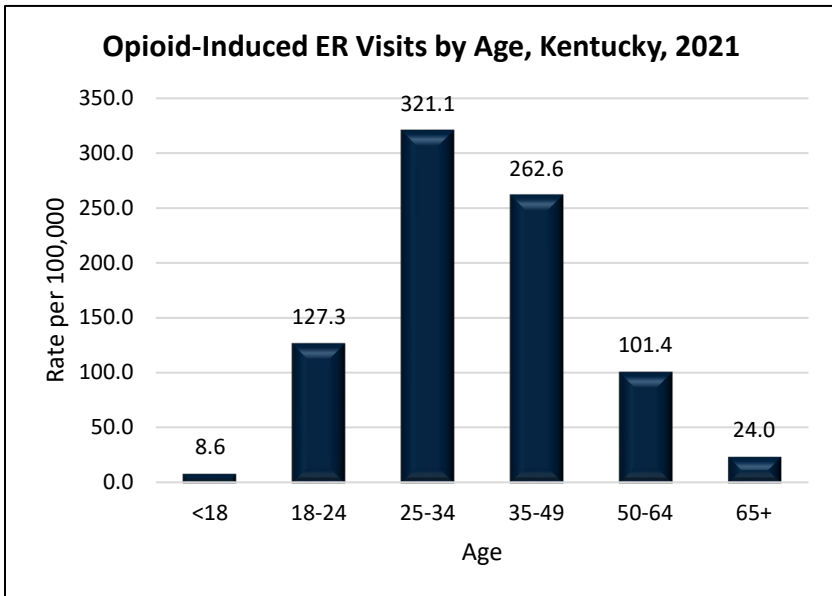
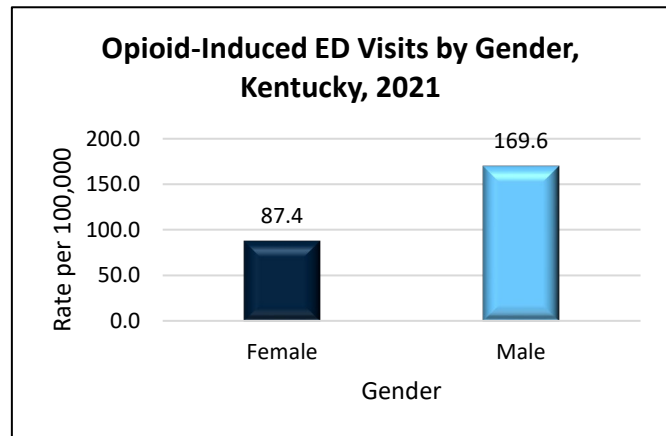
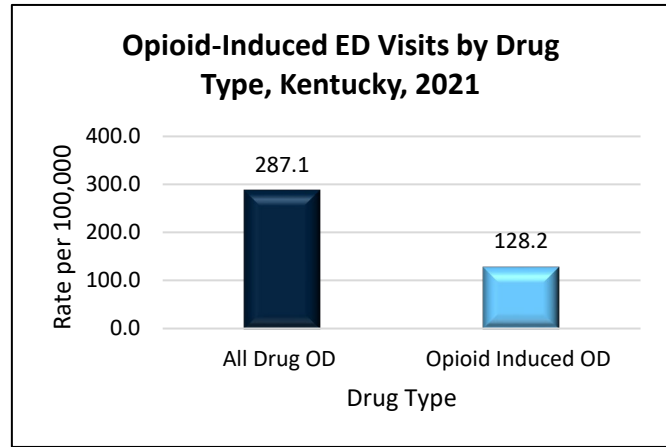


Opioid Induced Emergency Department (ED) Visits

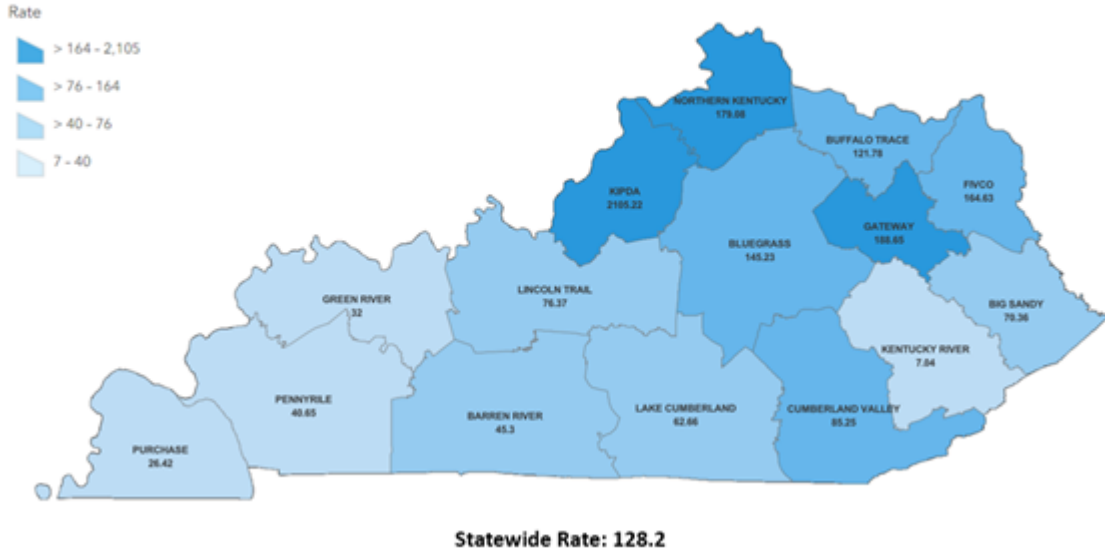
Definition of Indicator: These are emergency department (ED) visits of a Kentucky resident in a Kentucky facility that involved an ICD-9-CM diagnosis code or e-code indicating drug overdose. In addition, these visits had a code for a pharmaceutical opioid or heroin. Who is at risk in Kentucky?

- The Area Development District with the highest opioid-induced ED visits rate per 100,000 were in the KIPDA ADD at a rate of 2105.22.
- The year that had the highest opioid-induced ED visits rate per 100,000 was the year 2017 at 157.6.
- Males (169.6 rate per 100,000) had almost twice as many ED visits due to opioids as females (87.4 rate per 100,000).
- In Kentucky, there were higher rates of ED visits due to opioids in Black Kentuckians (141.8 per 100,000) than in white Kentuckians (131.2 per 100,000).
- The opioid-induced ED visits with the highest rate by age is 25-34 years old (321.1 per 100,000), while the lowest rate is below 18 years of age (8.6 per 100,000).

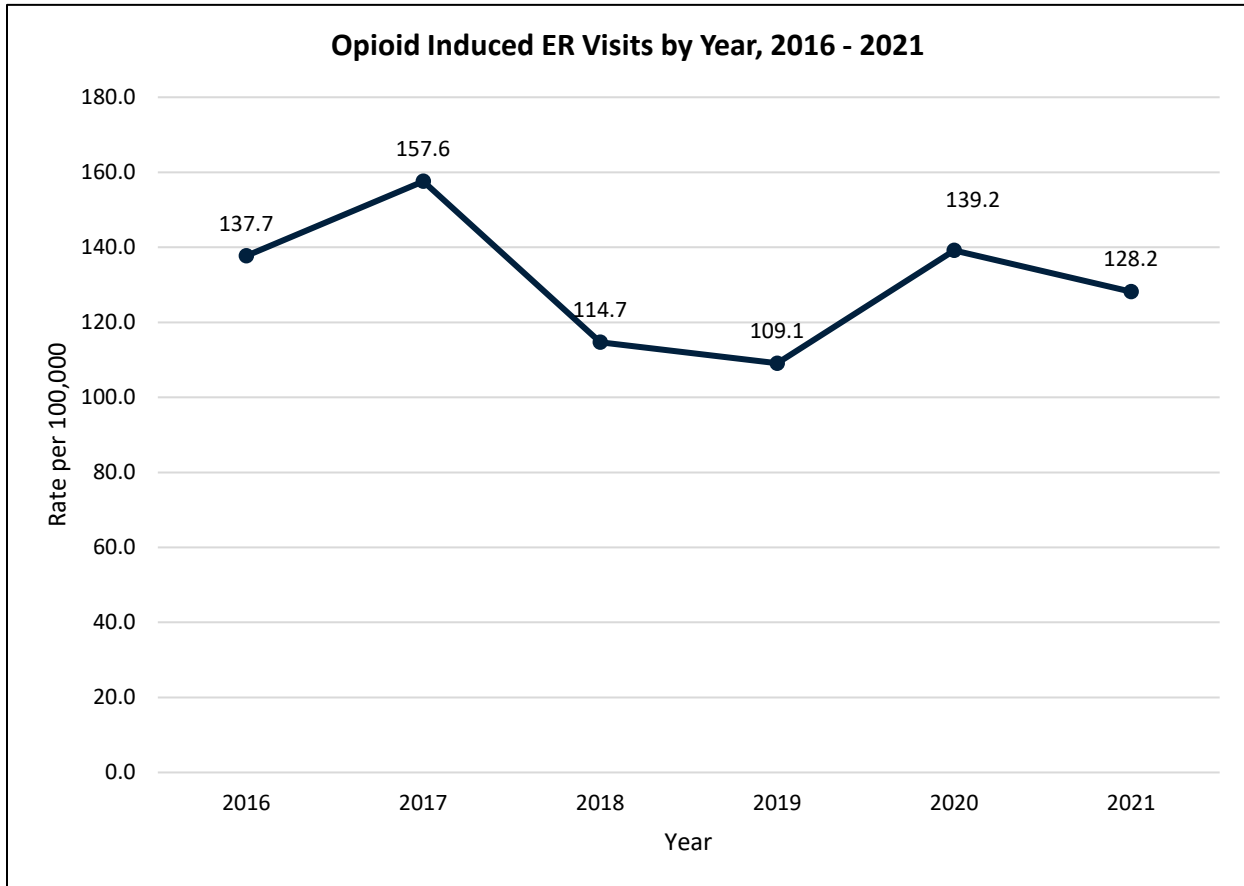
* Primary data source: Kentucky Injury Prevention and Research Center, Kentucky Outpatient Hospitalization Claims files 2016-2021, Cabinet for Health and Family Services.



Opioid Induced ED Visits per 100,000 by Area Development District, 2021



Opioid Induced ER Visits by Year, 2016 - 2021



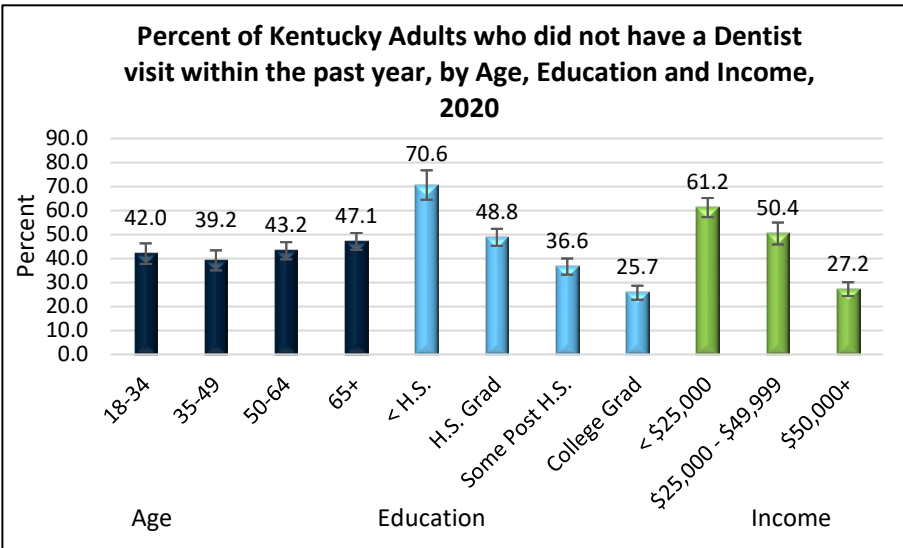
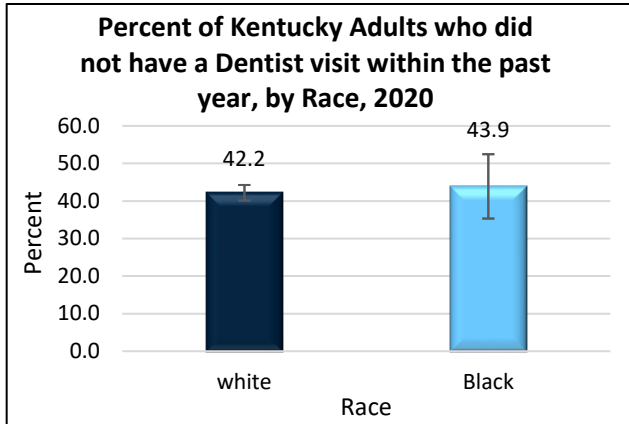
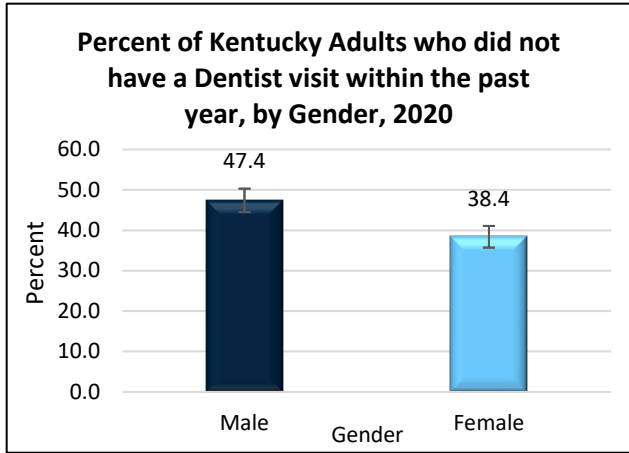
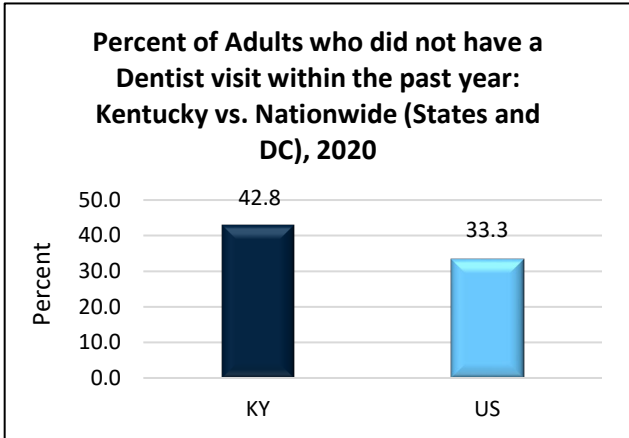
Oral Health Dental Visits

Question: Do you go to the dentist annually?

At Risk: Adults who answered “No” are considered at risk.
Who is at risk in Kentucky?

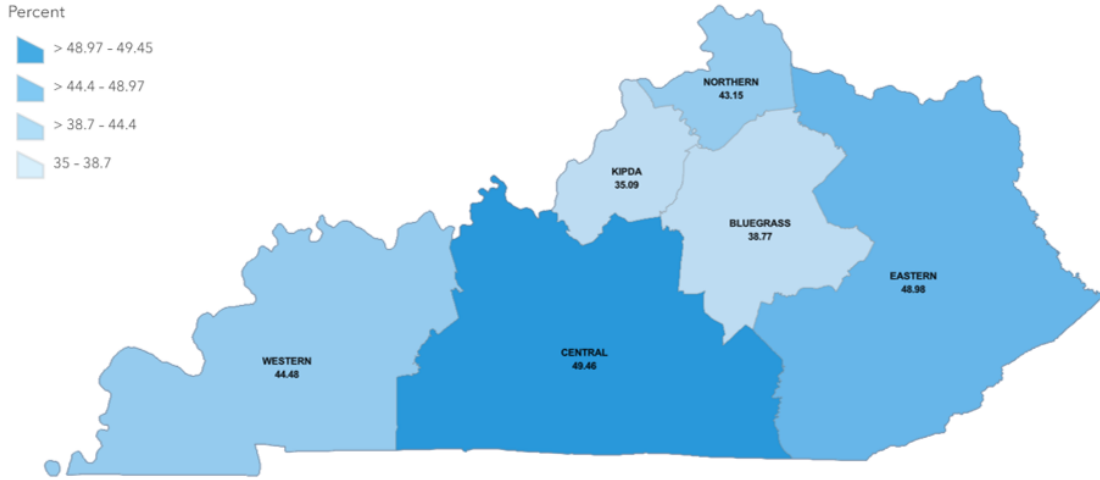
- In 2020, 42.8% of Kentucky adults reported “no” to visiting a dentist within the past year, higher than the U.S. median prevalence (33.3%).
- The prevalence of not visiting a dentist within the past year by gender is higher in males than females.
- The prevalence of not visiting a dentist within the past year is higher in Black Kentuckians (43.9%) than white Kentuckians (42.2%).
- Adults aged 65 and older reported a higher prevalence of not visiting a dentist within the past year than adults aged 35-49 (47.1% vs. 39.2%).
- Adults with less than a high school education reported a higher prevalence of not visiting a dentist within the past year than those with a college degree (70.6% vs. 25.7%).
- The prevalence of not visiting a dentist within the past year was higher among adults with an annual household income of less than \$25,000 than among those with a household income of \$50,000 or more (61.2% vs. 27.2%).

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



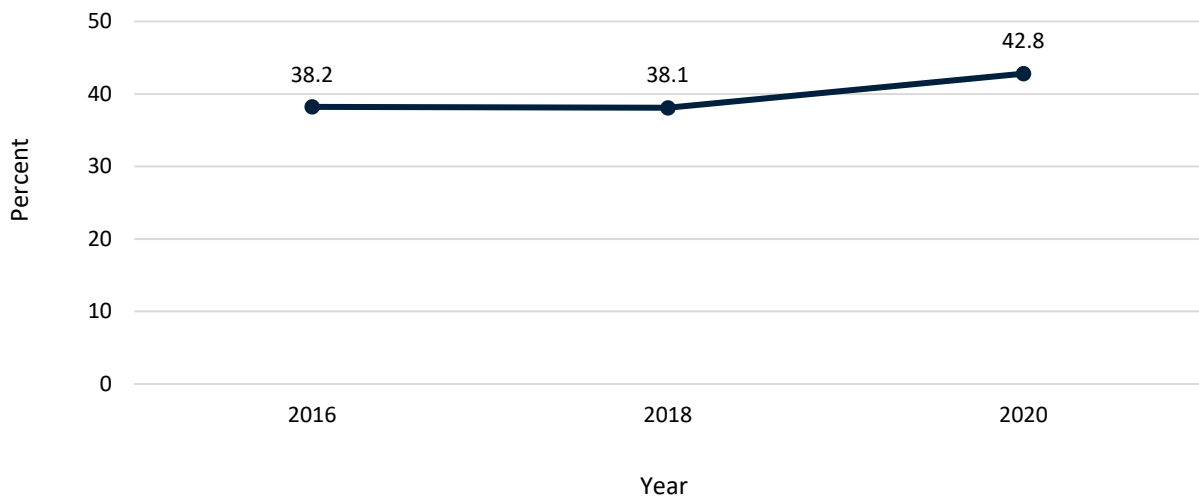
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults who did not have a Dentist visit within the past year by Region, 2020



Statewide Prevalence: 42.8
 Nationwide Median: 33.3

Percent of Kentucky Adults who did not have a Dentist visit within the past year, by Year, 2016-2020



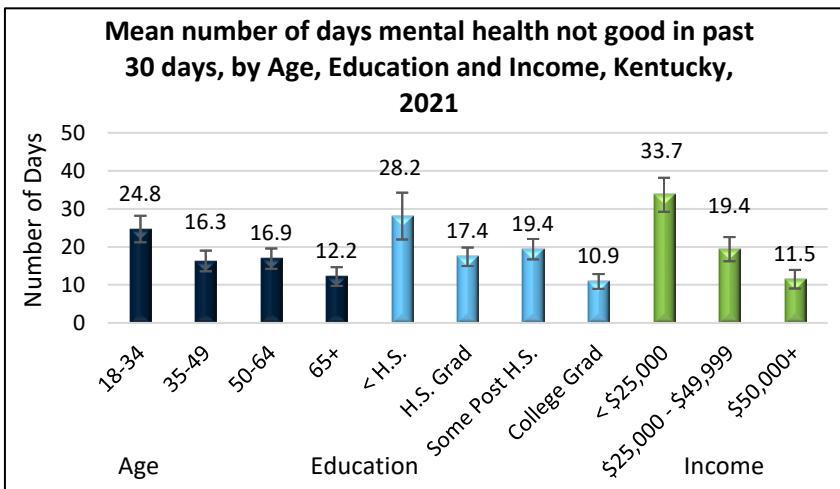
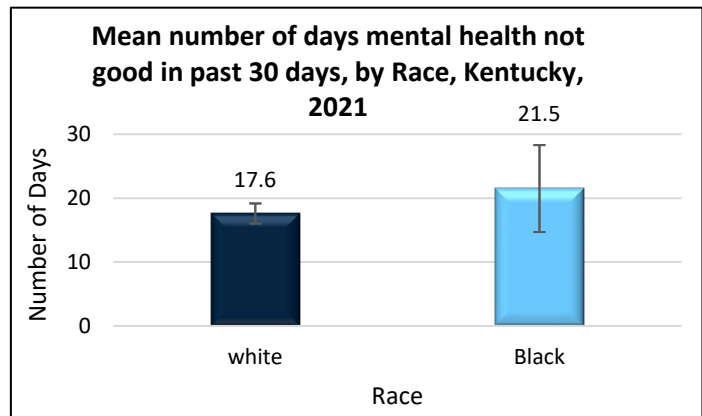
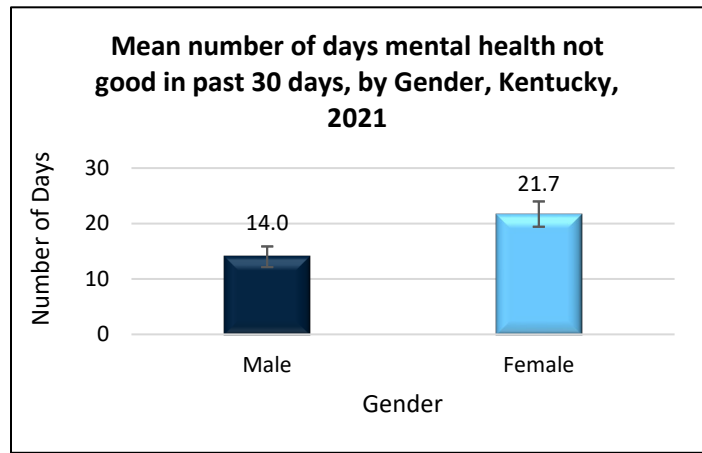
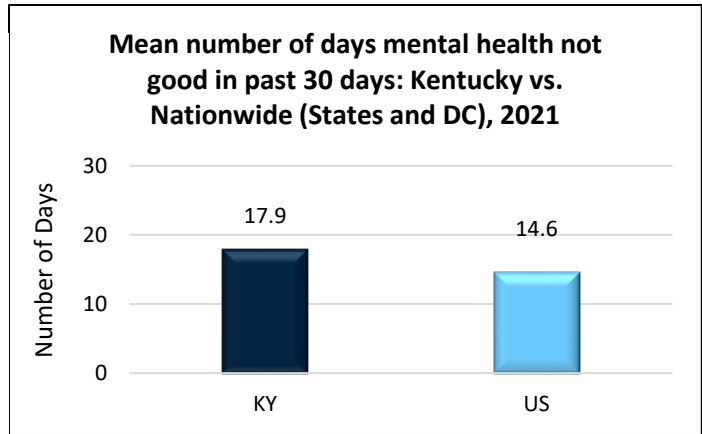
Poor Mental Health Days

Question: Now, thinking about your mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was your mental health not good?

Measure: Poor Mental Health Days is the average number of days in the previous 30 days adults report their mental health was not good. Who is at risk in Kentucky?

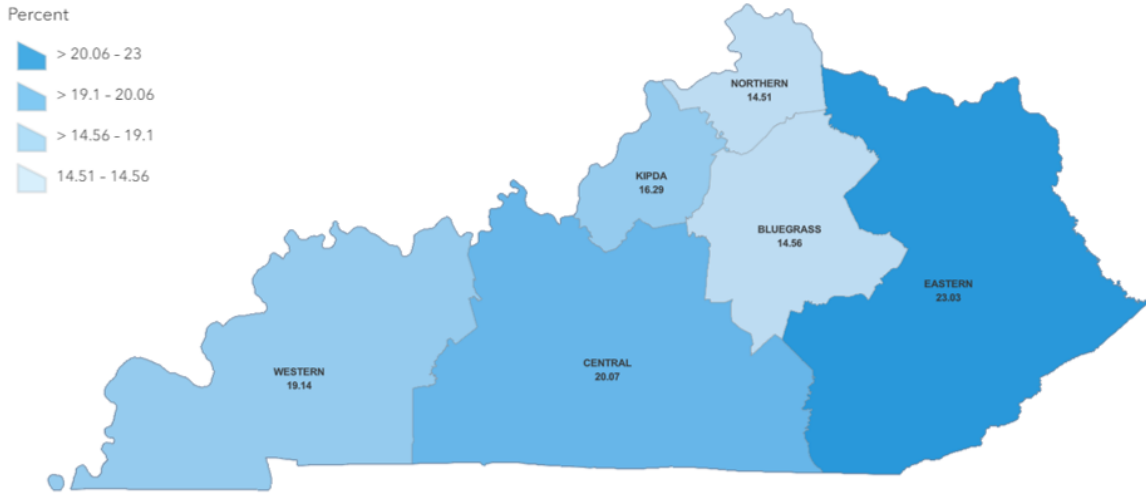
- In 2021, the average number of poor mental health days of more than 14 days in Kentucky was 17.9. The United States was 14.6.
- Women were more likely to have a higher number of poor mental health days than men (21.7 to 14.0).
- The average number of days in the previous 30 days adults report their mental health was not good is higher in Black Kentuckians (21.5) than white Kentuckians (17.6).
- Adults aged 18 to 34 years reported higher poor mental health days of more than 14 days (24.8) as compared to ages 65 and older (12.2).
- The average number of poor mental health days in the previous 30 days was the highest for those with less than a high school education (28.2) and lowest for those who had graduated from college (10.9).
- Poor mental health days were higher among adults with an annual household income of less than \$25,000 than those with a higher annual household income of \$50,000 or more.

* Primary data source: Kentucky Behavioral Risk Factor Surveillance (KyBRFS), 2021.



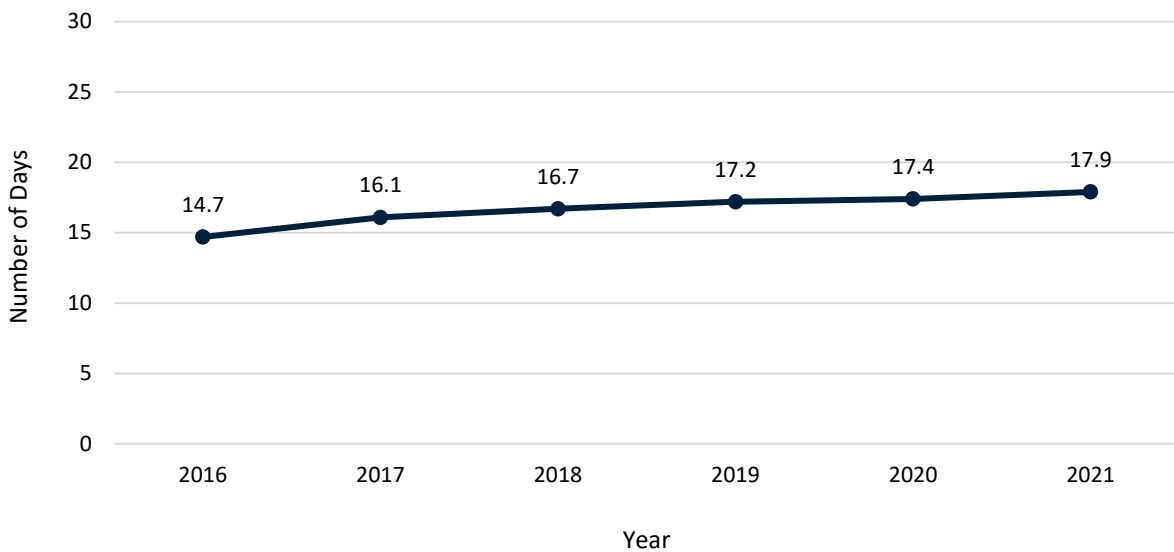
The tables above represent KY vs. Nationwide, gender and race. The table to the left represents age, education and income.

Percent of Kentucky Adults Mentally Unhealthy for 14 Days of More in Past Month by Region, 2021



Statewide Prevalence: 17.9
 Nationwide Median: 14.4

Mean number of days mental health not good in past 30 days, Kentucky, by Year, 2016-2021



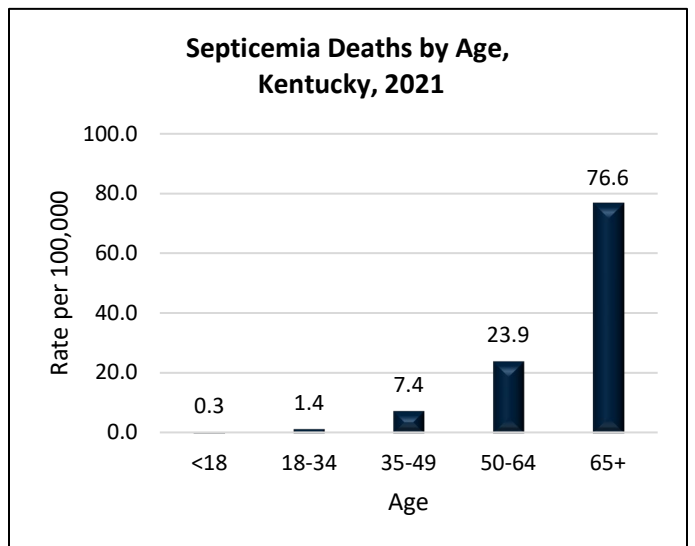
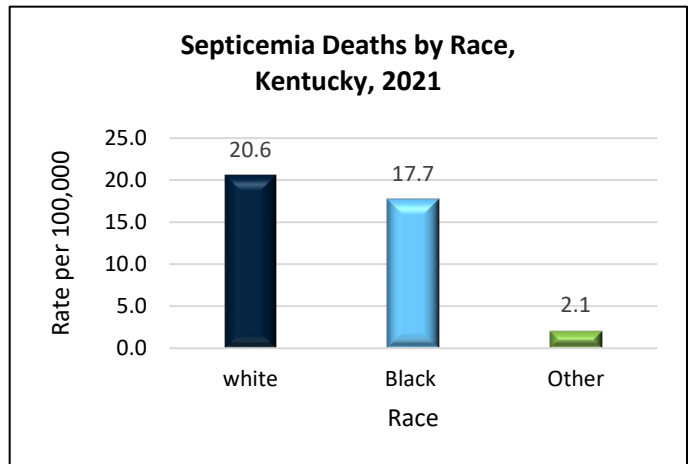
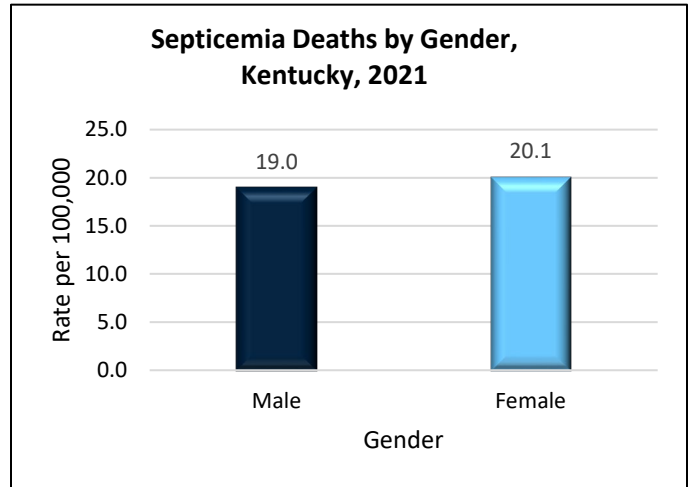
Septicemia

Definition of Indicator: The number of people who died due to septicemia.

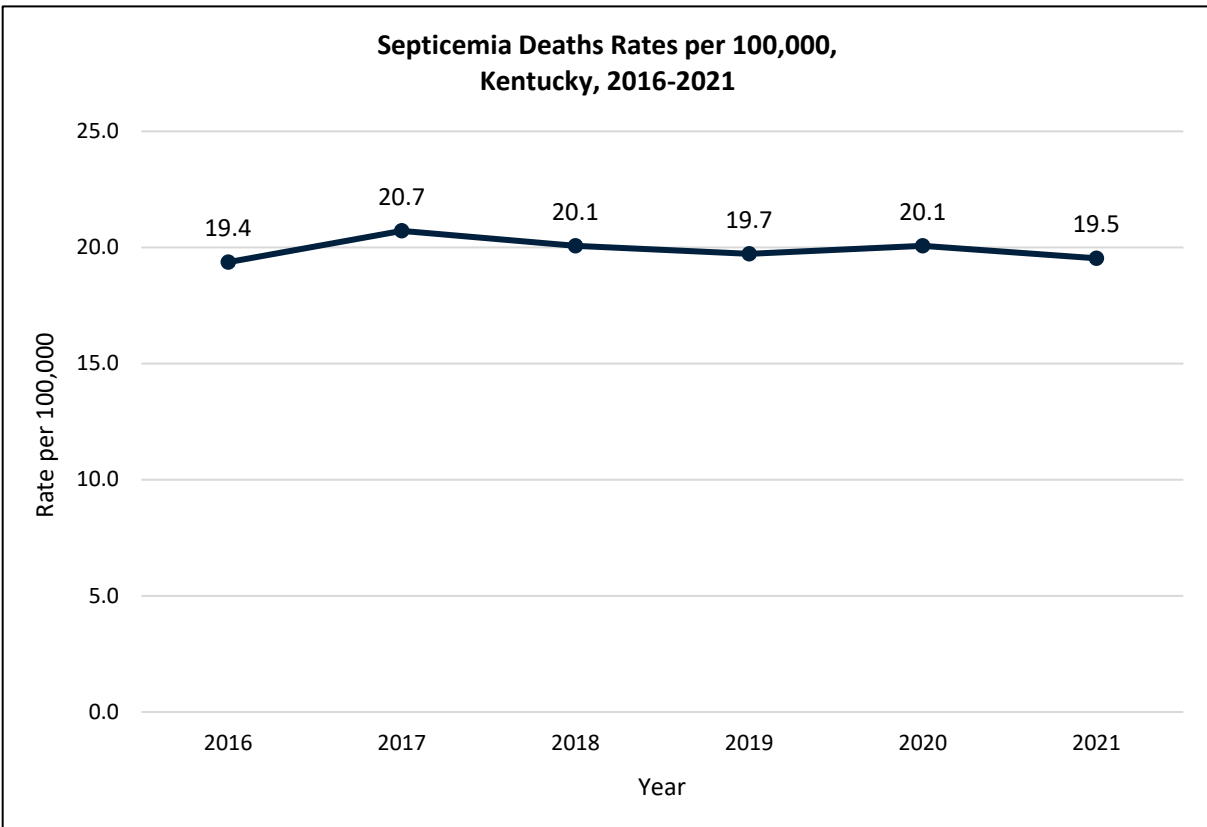
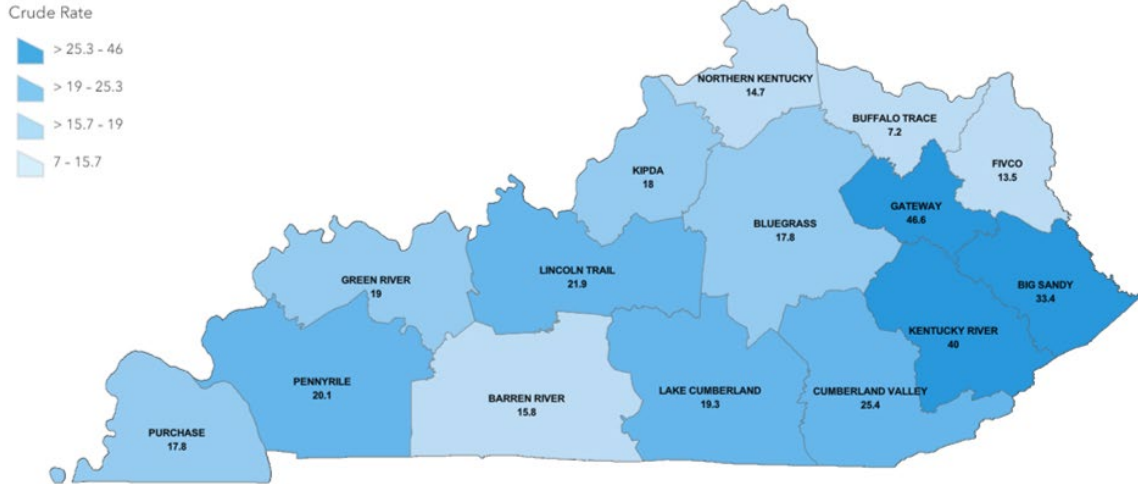
Who is at risk in Kentucky?

- Kentucky is ranked 4th in the United States for Septicemia deaths.
- In 2021, Kentucky's septicemia crude mortality rate was higher (19.5 per 100,000) compared to the U.S. (12.4 per 100,000).
- In 2021, septicemia deaths in females (20.1) were higher than in males (19.0).
- In 2021, septicemia deaths by race were highest among white Kentuckians.
- In 2021, septicemia deaths increase, with age with the highest rate at 76.6 per 100,000 for ages 65+.
- Deaths from septicemia did not differ much from 2016 (19.4) to 2021 (19.5).
- In 2021, the septicemia deaths in the Gateway Area Development District were higher than other in districts.

* Primary data source: Kentucky Office of Vital Statistics, 2021.



Septicemia Deaths by Area Development District, 2021



Maternal and Child Health

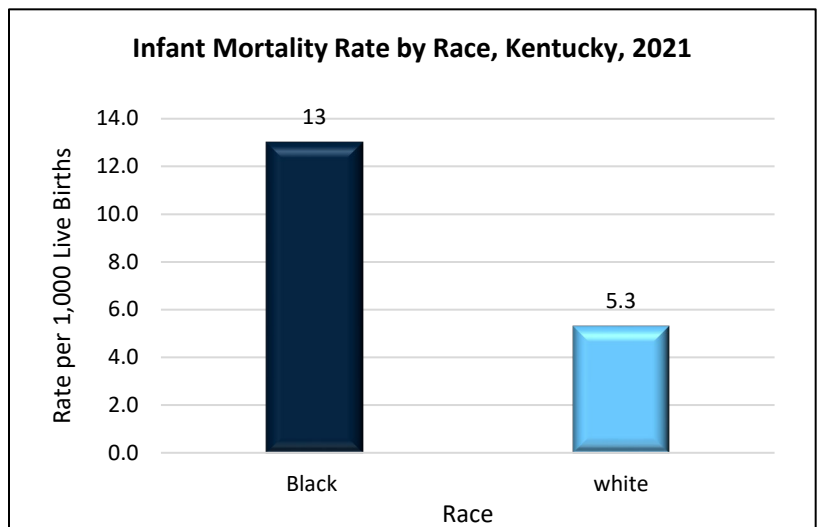
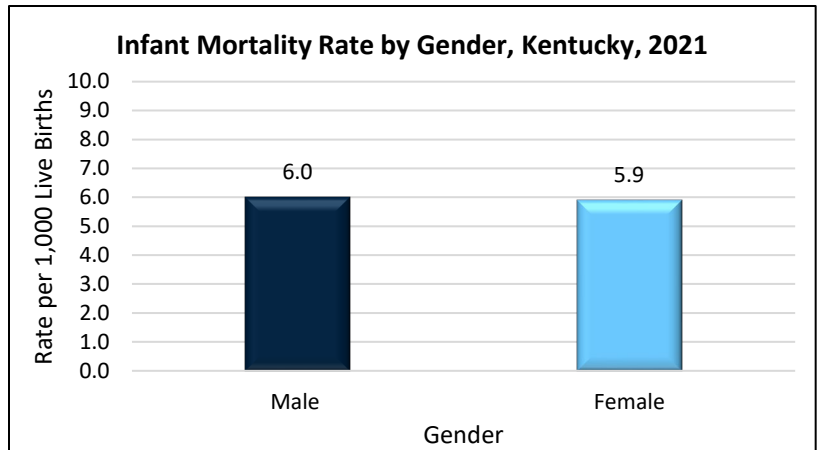
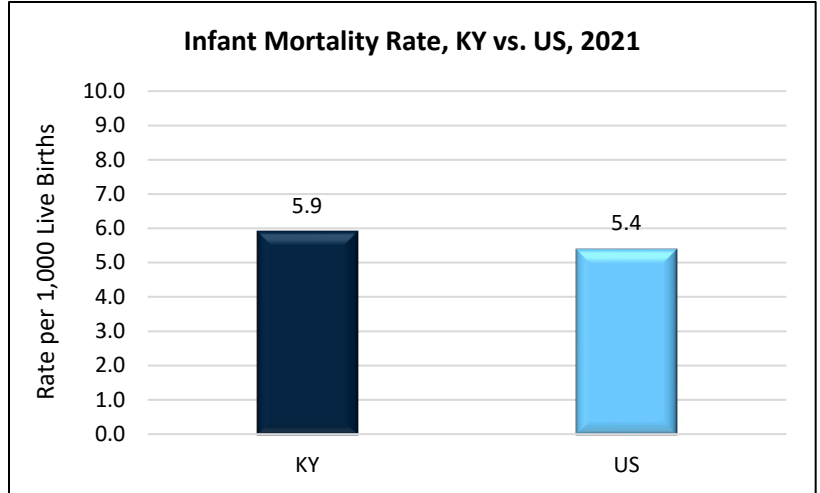
Infant Mortality

Definition of Indicator: The infant mortality rate (IMR) is the number of infant deaths for every 1,000 live births and is seen as the best indicator of a state’s overall health, social and economic environment.

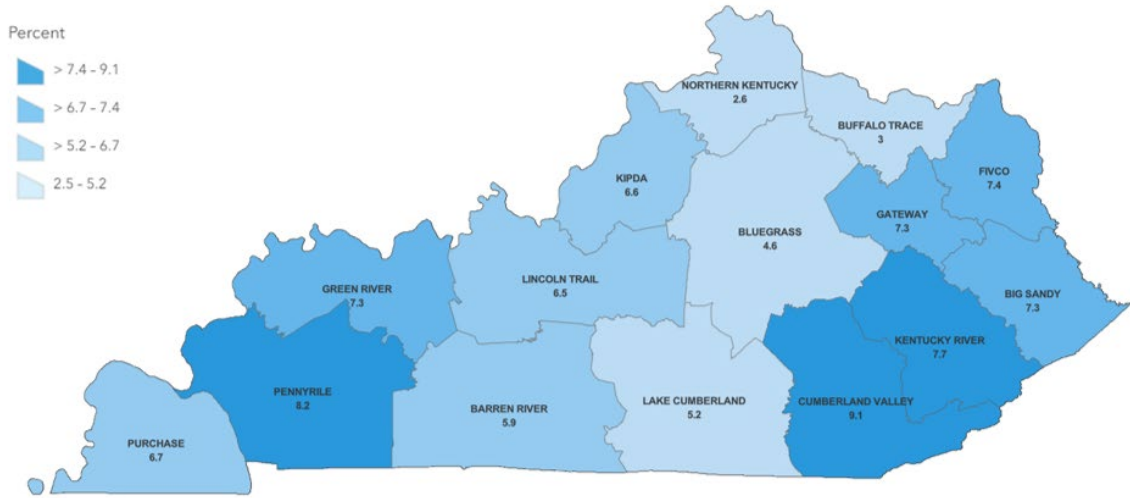
Who is at risk in Kentucky?

- In 2021, the infant mortality rate for the U.S. was 5.4, and Kentucky is 5.9.
- In 2021, females (5.9) had a lower infant mortality rate than males (6.0).
- In 2021, the infant mortality rate among Black infants (13 per 1,000 live births) was over twice the rate of white infants (5.3 per 1,000 births).
- From 2016 to 2021, the infant mortality rate has declined from 7.1 to 5.9.
- In 2021, the infant mortality rate in the Cumberland Valley Area Development District was higher than in other districts.

* Primary data source: Kentucky Office of Vital Statistics, 2021.

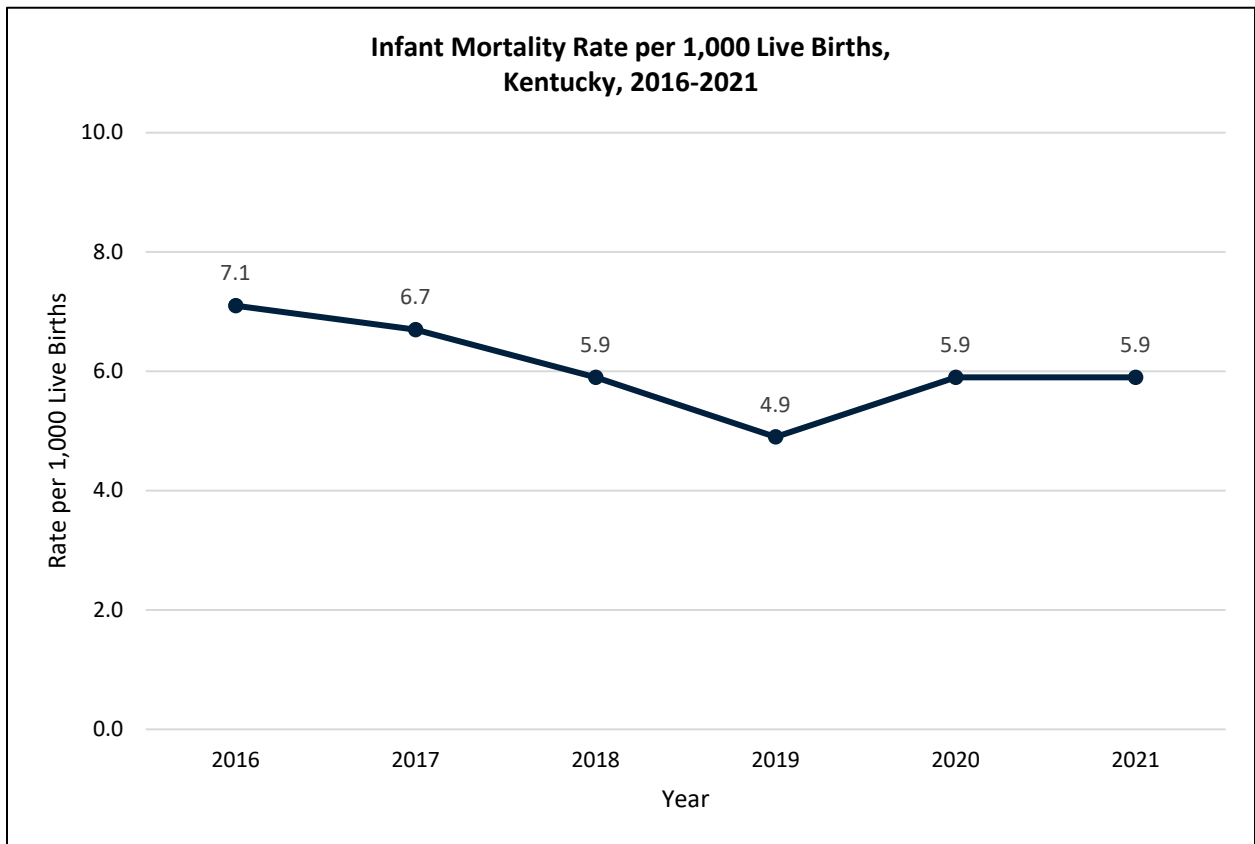


Infant Mortality Rate per 1,000 by Area Development District, 2021



Statewide Mortality Rate: 5.9

Infant Mortality Rate per 1,000 Live Births, Kentucky, 2016-2021

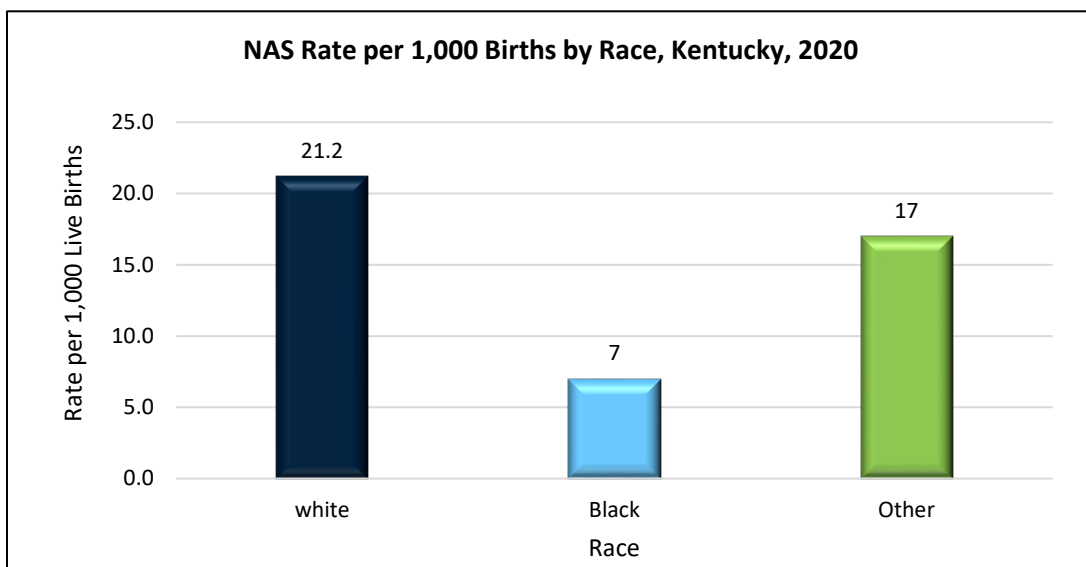
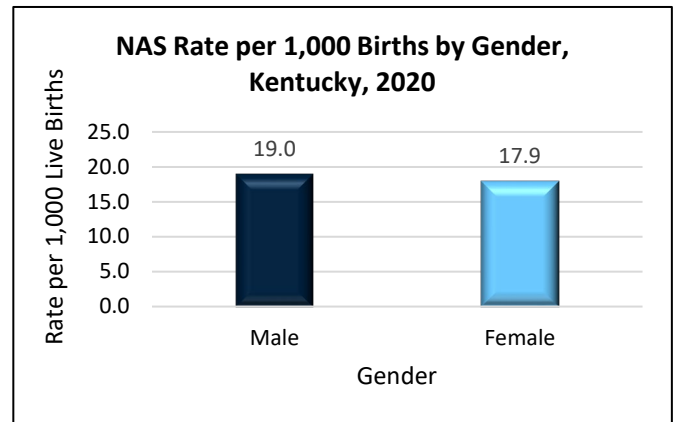
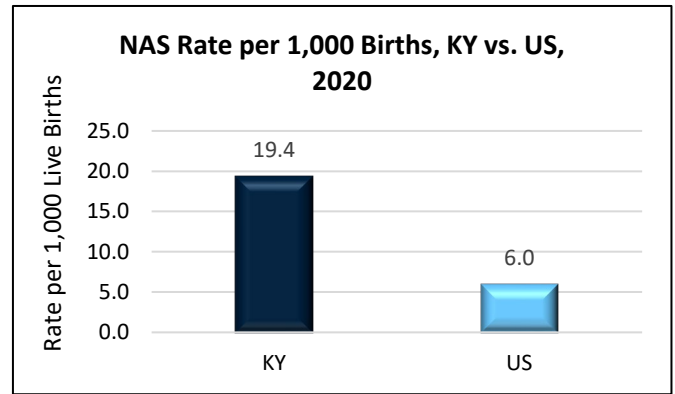


Neonatal Abstinence Syndrome (NAS)

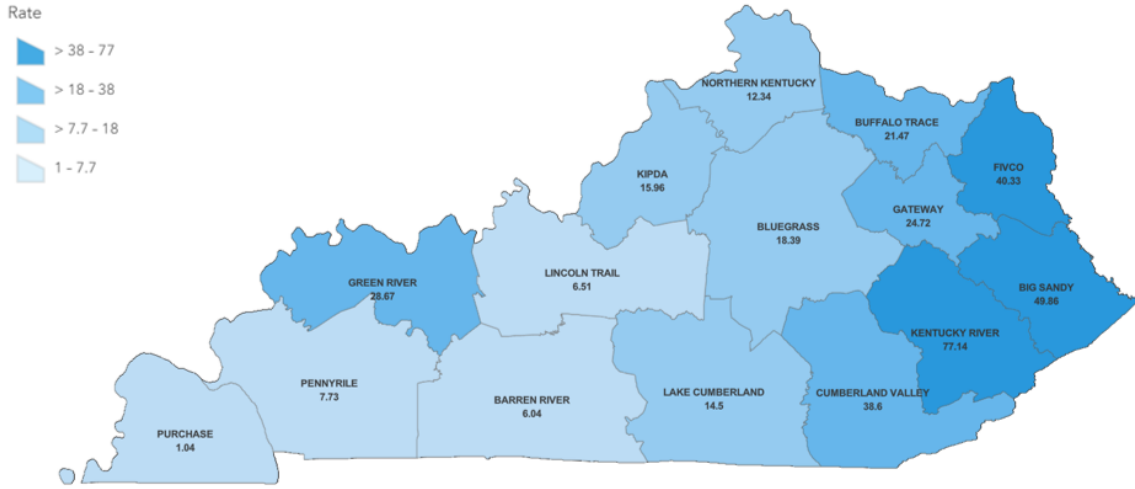
Definition of Indicator: Neonatal abstinence syndrome (NAS) is the collection of symptoms that babies experience when they have withdrawal from drugs that they were exposed to in utero. Who is at risk in Kentucky?

- In 2020, Kentucky, at a rate of 19.4 per 1,000 births, had a three times higher rate of NAS than the U.S. at a rate of 6.0 per 1,000 births.
- In Kentucky, the rate of NAS dropped slightly from 2016 (23.0 per 1,000 births) to 2020 (19.4 per 1,000 births).
- In 2020, the ADD with the highest rate per 1,000 births was Kentucky River (77.14 per 1,000 births).
- Looking at gender in Kentucky, slightly more males (19.0) than females (17.9) have a higher rate per 1,000 live births with NAS.
- In Kentucky, the highest rate of NAS was among white Kentuckians, while the lowest rate of NAS was among Black Kentuckians.

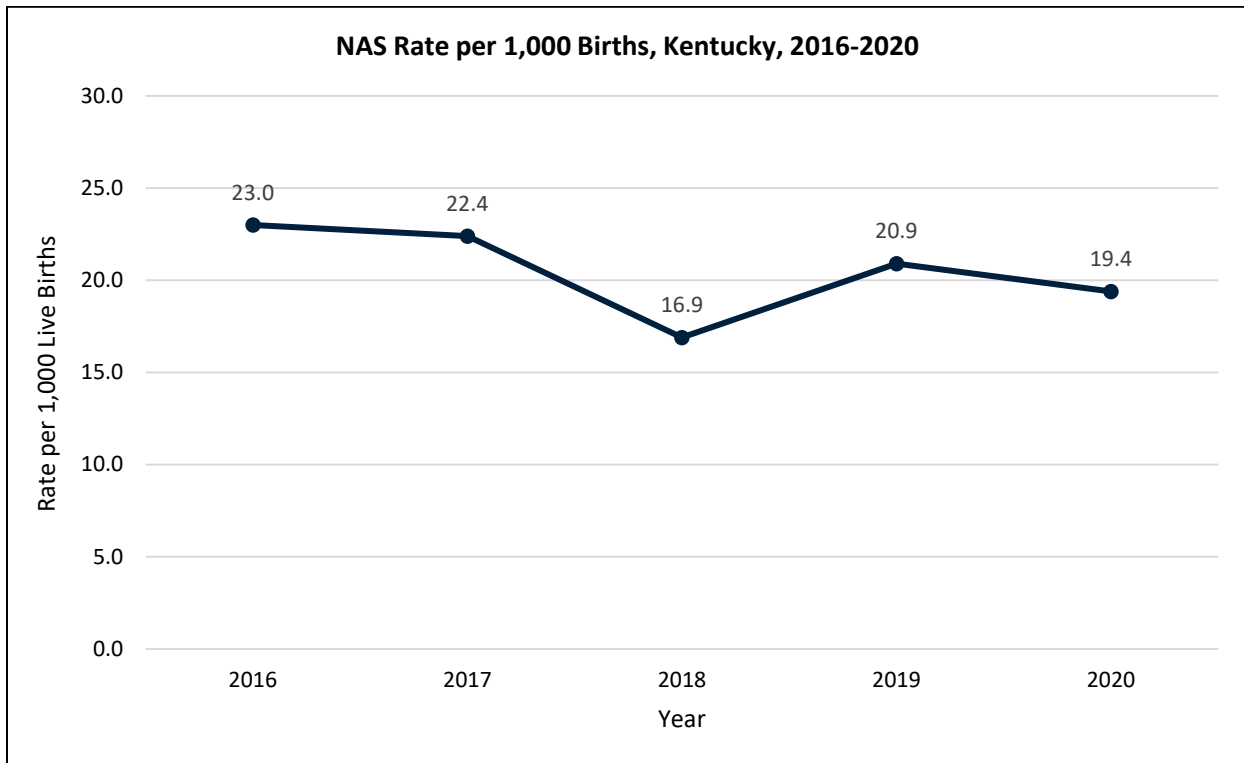
* Primary data source: Neonatal Abstinence Syndrome Reporting Registry, 2016-2020; Cabinet for Health and Family Services, Kentucky Department for Public Health, Division of Maternal and Child Health.



Neonatal Abstinence Syndrome Rates per 1,000 Births by Area Development District, 2020



Statewide Rate: 19.4
 Nationwide Rate: 6.0



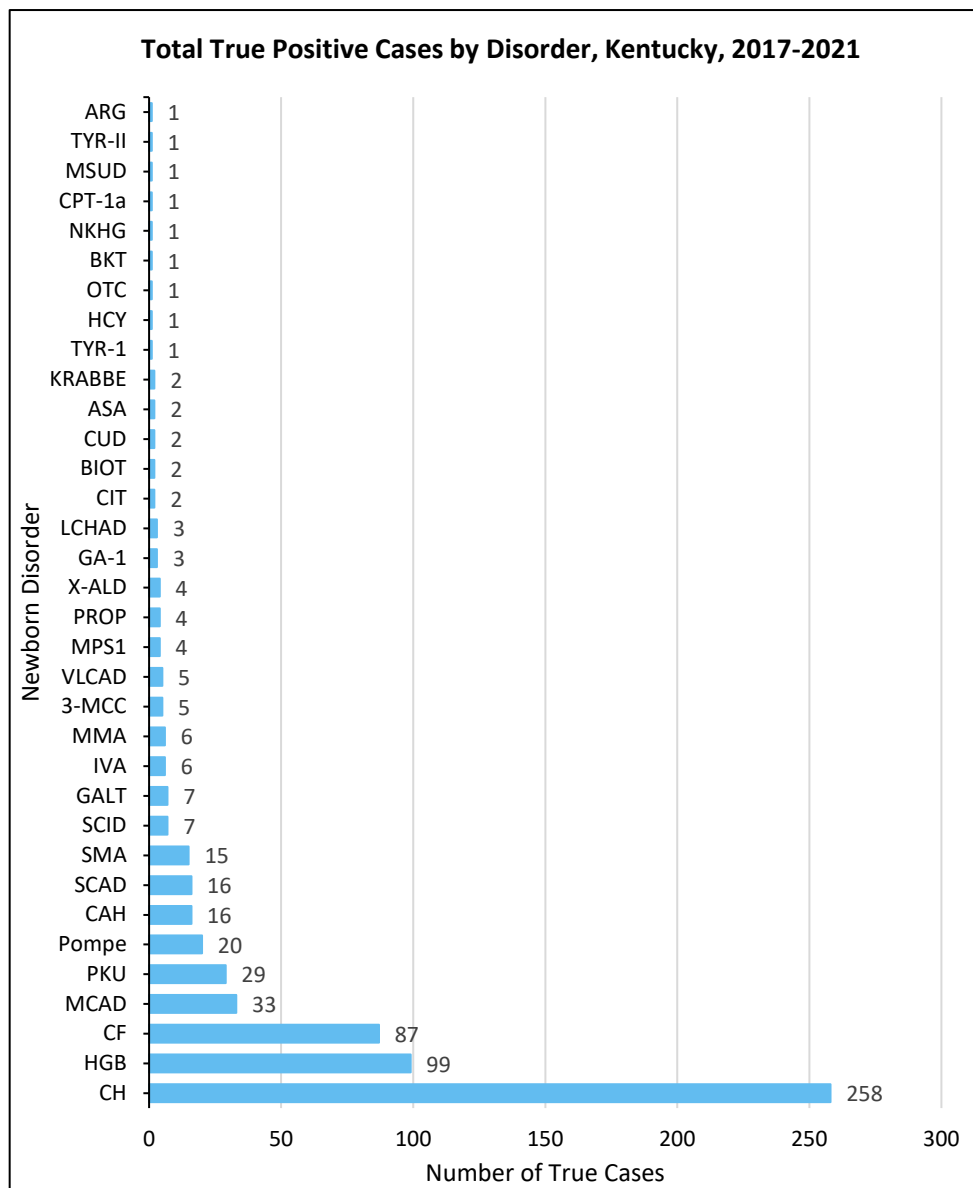
Newborn Disorders

Review of Effectiveness of the Newborn Screening in Kentucky: Newborn screening identifies infants at high risk for congenital disorders, allowing early intervention and improved outcomes. In the newborn screening laboratory at KDPH in the state of Kentucky, 55 primary conditions are screened, an increase from 53 since 2017. The review of the performance of the newborn screening program targets the screening approaches for specific disorders to improve the efficiency and quality of the newborn screening process. The results provide the scope of the impact of newborn screenings on public health in Kentucky.

Who is at risk in Kentucky?

- Overall, out of 252,508 newborns screened, the disorder prevalence is ~1 in 400 births.
- The prevalence of individual disorders is distributed across a wide spectrum. Among all disorders screened, the prevalence of Congenital Hypothyroidism (CH) is the highest, 1 in 979 babies.
- Lower false-positive rates are observed among disorders including Beta-ketothiolase deficiency (BKT), Krabbe, X-ALD, SMA, MPS1, Pompe, MCAD, PKU and Biotinidase deficiency.

* Primary data source: Division of Laboratory Services Kentucky Online Gateway.

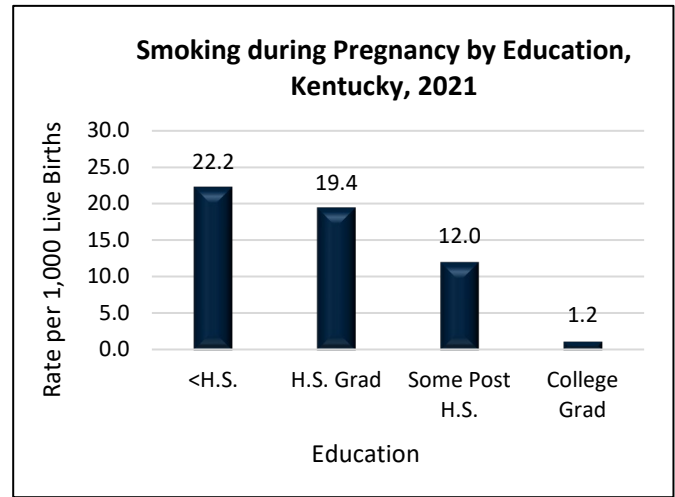
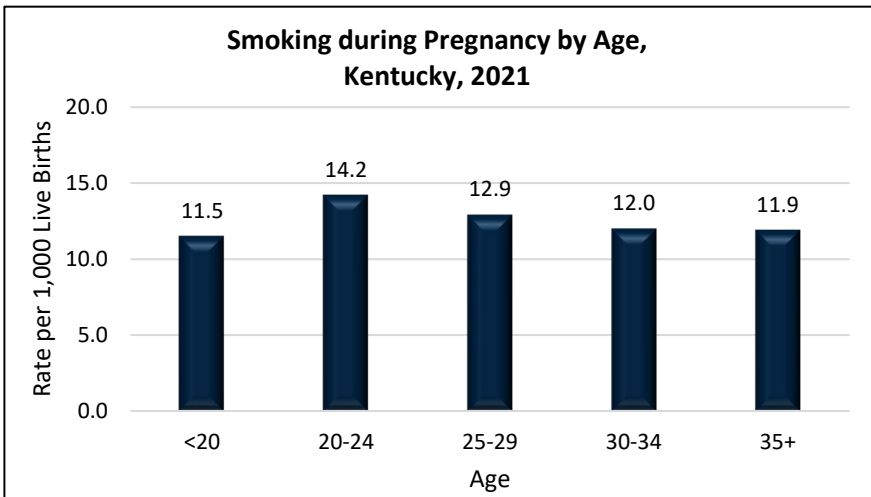
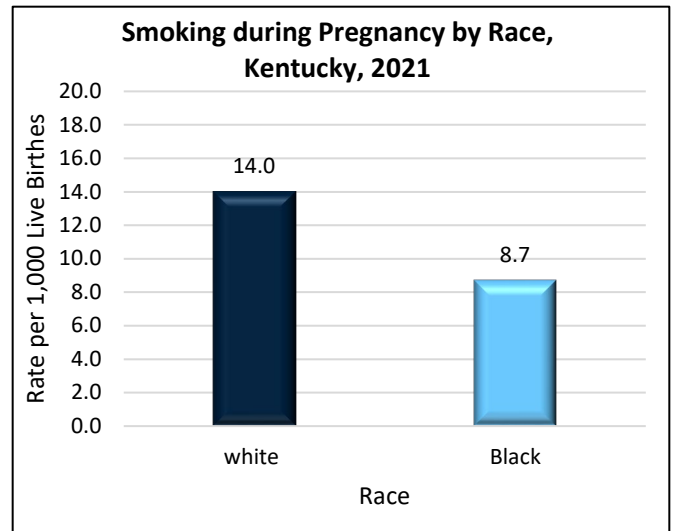
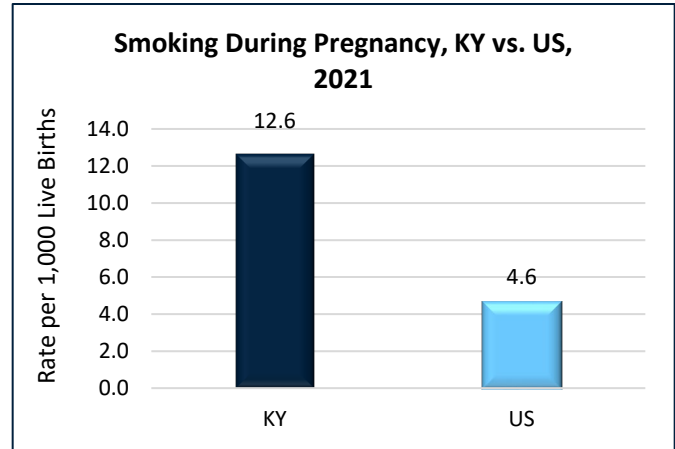


Smoking During Pregnancy

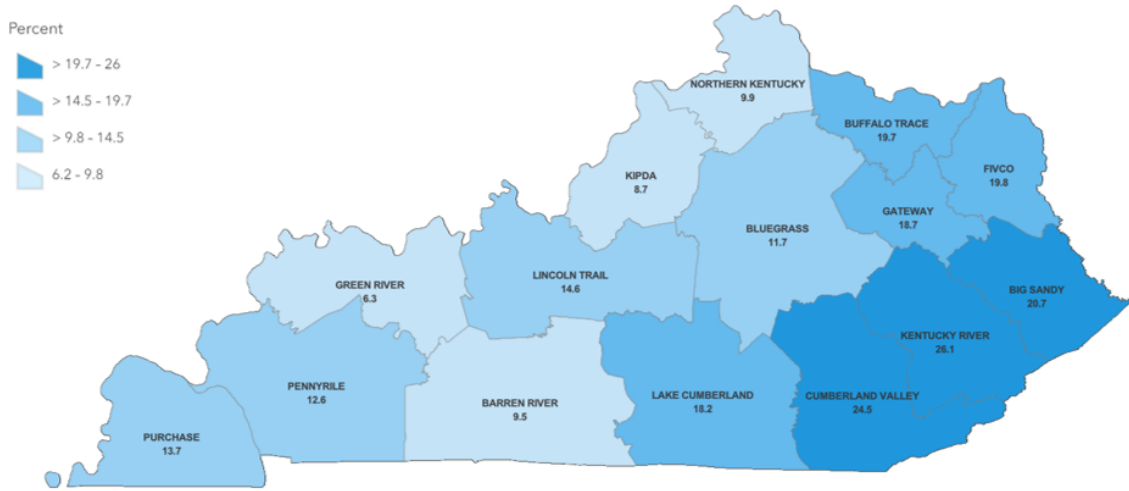
Definition of Indicator: Smoking during pregnancy includes smoking any number of cigarettes at any time during pregnancy. This indicator is consistently reported as a predictor of adverse birth outcomes including, preterm births, low birth weight and infant mortality. Who is at risk in Kentucky?

- In 2021, the rate of pregnant women in Kentucky reporting smoking during pregnancy was 12.6/1,000 live births. The average rate reported for smoking during pregnancy in the U.S. is 4.6 of adults.
- In 2021, the rate of white infants with mothers who smoked during pregnancy was 14.0 compared to 8.7 among Black infants.
- In 2021, the highest rate (14.2) of mothers who smoked during pregnancy were ages 20 through 24.
- In 2021, mothers with less than a high school education were more likely to smoke during pregnancy than mothers with more education.
- From 2016 to 2021, the rate of Kentucky residents' births with mothers who smoked during pregnancy declined from 18.4 to 12.6.
- In 2021, mothers in the Kentucky River Area Development District were more likely to smoke during pregnancy than in other districts.

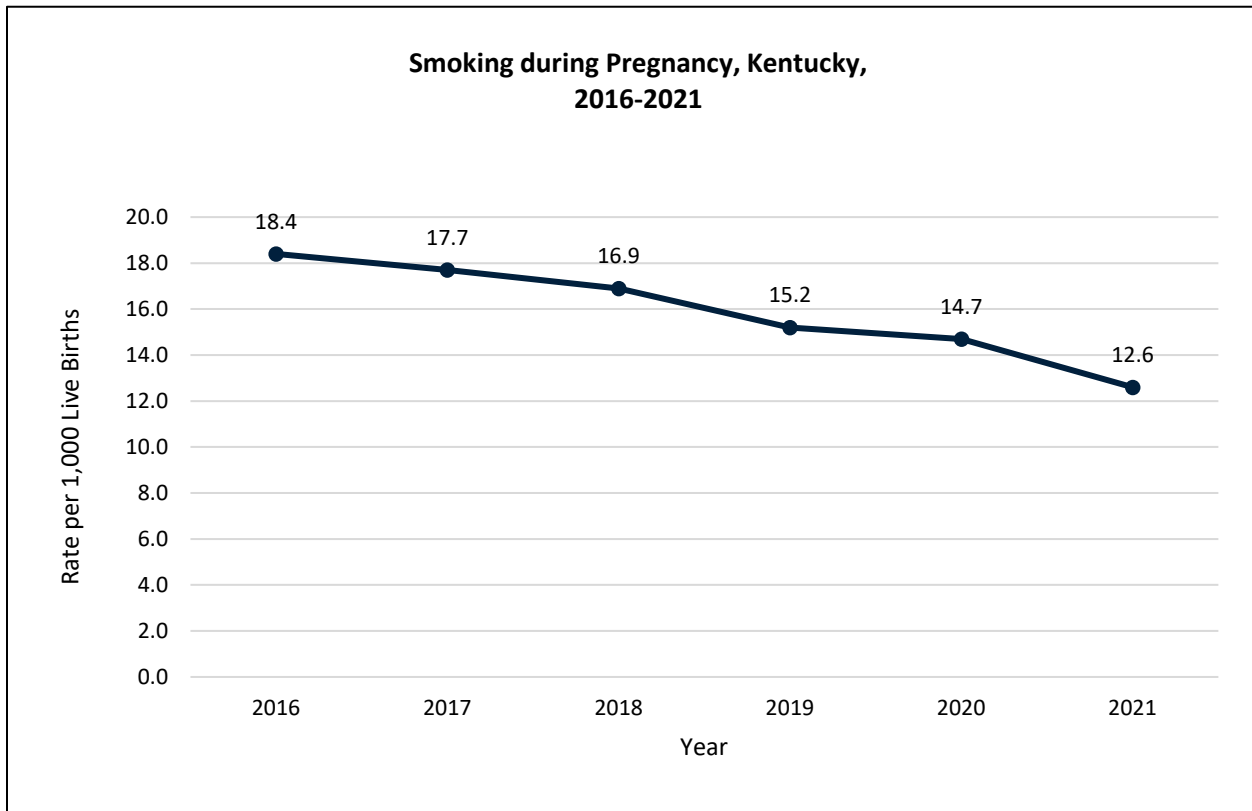
* Primary data source: Kentucky Office of Vital Statistics, 2021.



Percent of Live Births to Women who Smoked During Pregnancy by Area Development District, 2021



Statewide Percentage: 12.64



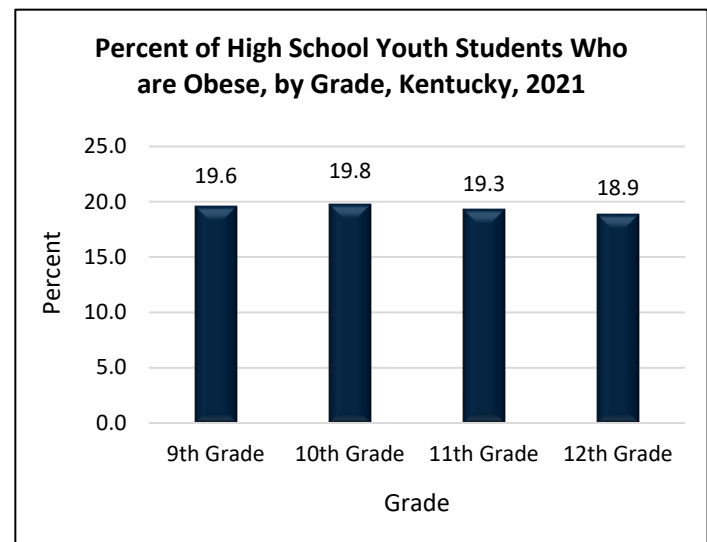
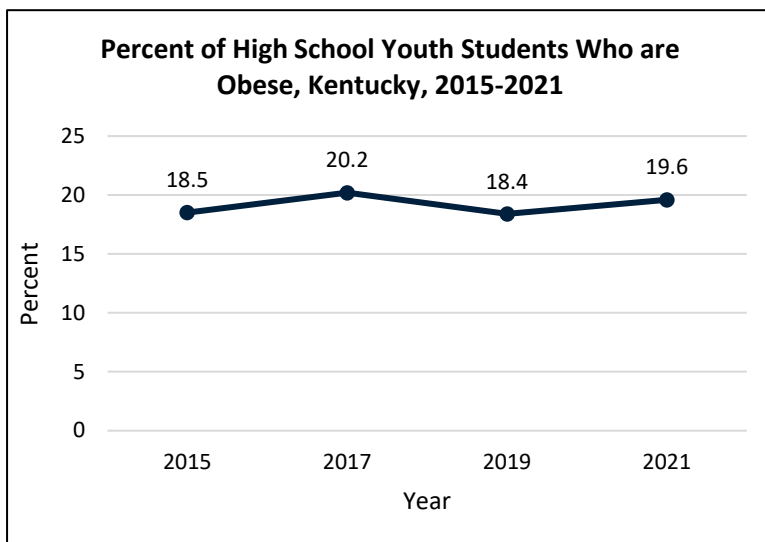
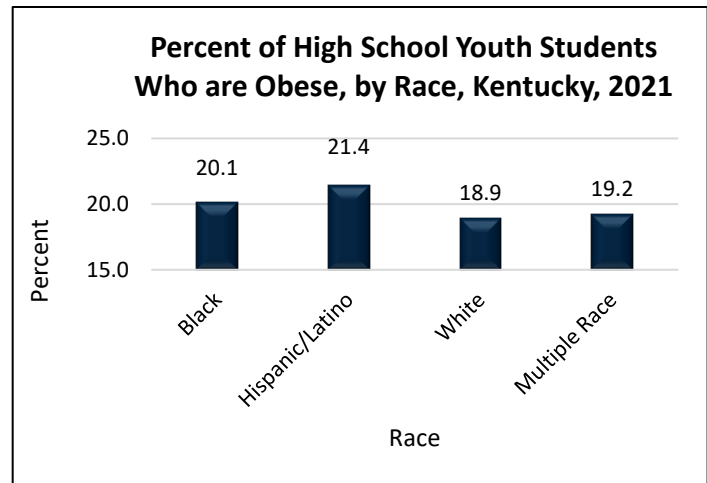
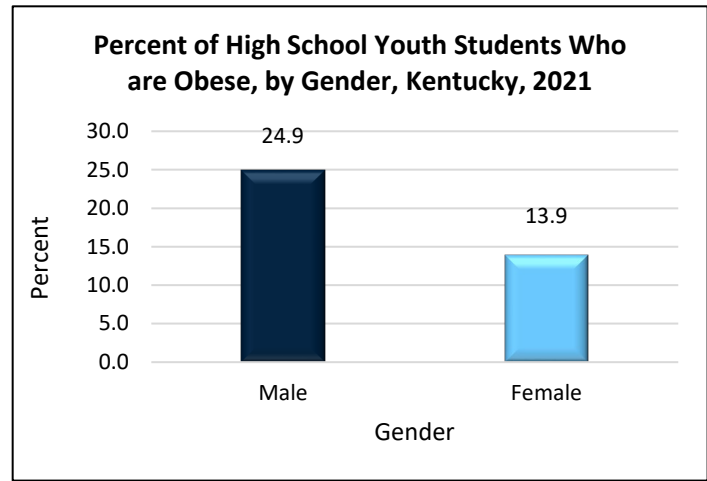
Youth Obesity

Definition of Indicator: Percentage of students who were obese (\geq 95th percentile for body mass index, based on sex- and age-specific reference data from the 2000 CDC growth chart). Overweight and Obese indicators are only reported for high school students.

Who is at risk in Kentucky?

- In 2021, Kentucky (19.6%) youth obesity was higher than the U.S. (16.3%).
- In 2021, male high school students were more likely to be obese than female high school students.
- The prevalence of obesity in youth does not show a difference between races.
- The prevalence of youth obesity by grade was slightly highest in the tenth (10th) grade and slightly lowest in the twelfth (12th) grade.
- From 2017 to 2019, the percentage of high school students who were obese decreased from 20.2% to 18.4%. From 2019 to 2021, the percentage of high school students who were obese increased from 18.4% to 19.6%.

* Primary data source: Kentucky Behavioral Youth Risk Factor Surveillance (KyYRBS), 2021.



Youth Nutrition and Physical Activity

Definition of indicator: Percentage of high school students who indicated the following nutrition and physical activity responses.

Nutrition and Physical Activity	Kentucky	US
Did not eat vegetables [green salad, potatoes (excluding French fries, fried potatoes or potato chips), carrots, or other vegetables during the 7 days before the survey]	10.8%	9.3%
Did not drink milk (counting milk in a glass or cup, from a carton, or with cereal and the half pint of milk served at school as equal to one glass during the 7 days before the survey)	37.3%	35.7%
Drank a can, bottle, or glass of soda or pop two or more times per day (such as Coke, Pepsi, or Sprite, not counting diet soda or diet pop during the 7 days before the survey)	18.5%	8.5%
Did not eat breakfast on all 7 days (during the 7 days before the survey)	77.0%	75.0%
Not physically active for at least 60 minutes on at least 1 day (in any kind of physical activity that increased their heart rate and made them breathe hard some of the time during the 7 days before the survey)	15.9%	15.8%
Spent 3 or more hours per day on screen time (in front of a TV, computer, smart phone or other electronic device watching shows or videos, playing games, accessing the Internet or using social media, not counting time spent doing schoolwork, on an average school day)	73.7%	75.9%
Primary data Source: Kentucky Behavioral Youth Risk Factor Surveillance (KyYRBS) 2021, grades 9-12.		

Youth Alcohol Use

Definition of Indicator: The following data is based on the Kentucky Incentives for Prevention (KIP) survey, which anonymously surveys student use of alcohol, tobacco and other drugs. Additionally, it has specific questions related to adolescent social and emotional well-being. The survey is administered to grades 6th, 8th, 10th and 12th every other year to over 90,000 students. Data depicted is only for tenth (10th) grade students ages 14-18.

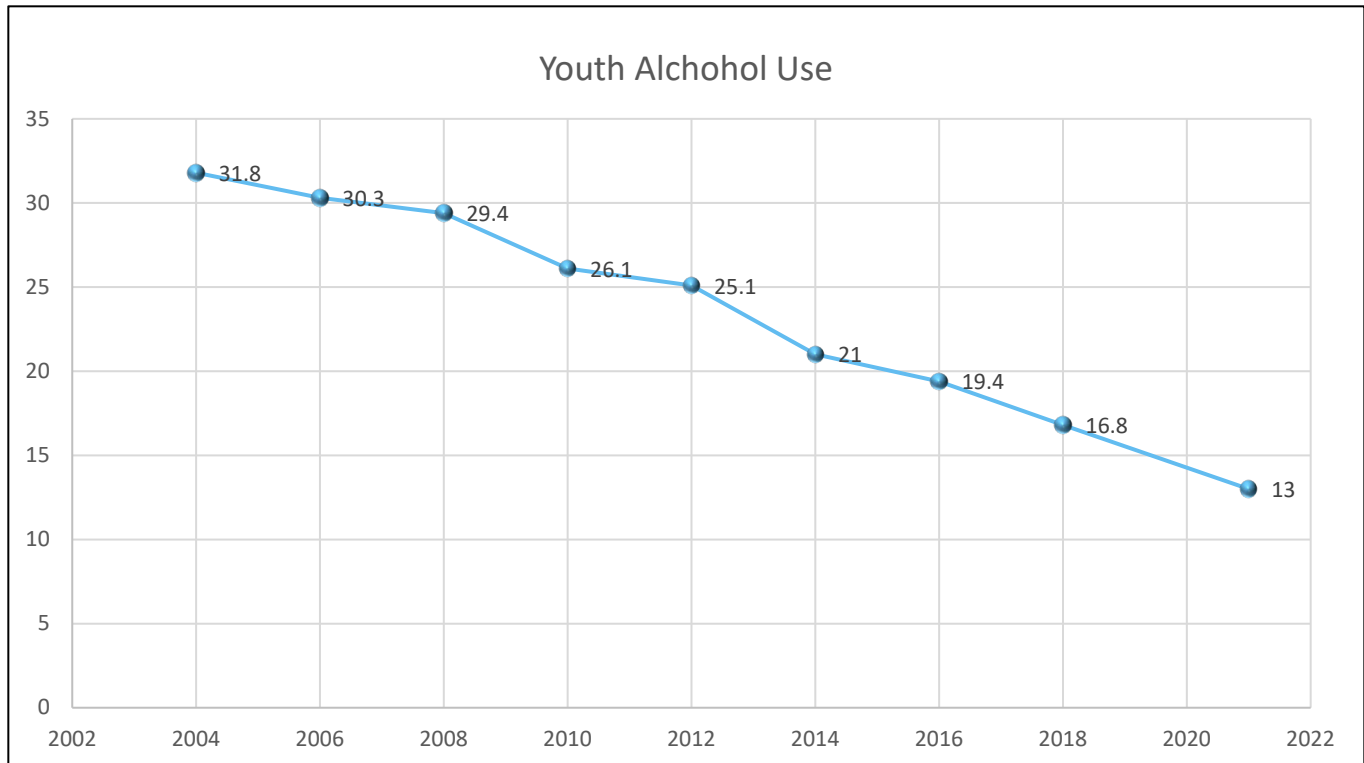
Note: Due to the COVID-19 pandemic, the 2020 survey was delayed to 2021. This mid-pandemic survey included additional questions highlighting factors that impact adolescent behavior including, COVID-19, sexual orientation, racial justice movement and psychological distress. The two largest school systems (Jefferson and Fayette) did not participate in the 2021 KIP Survey. Full survey results are at <https://www.kipsurvey.com/s/KIP-State-Regional-Trend-2021-28Sep2022.pdf>.

Who is at risk in Kentucky?

Question: On how many occasions (if any) have you had alcoholic beverages (beer, wine or hard liquor) to drink—more than a few sips in the past 30 days? *Percent answering one or more times.*

➤ In 2021, Kentucky (13%) has a lower percentage of youth alcohol use than the U.S. (22.7%).

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022.

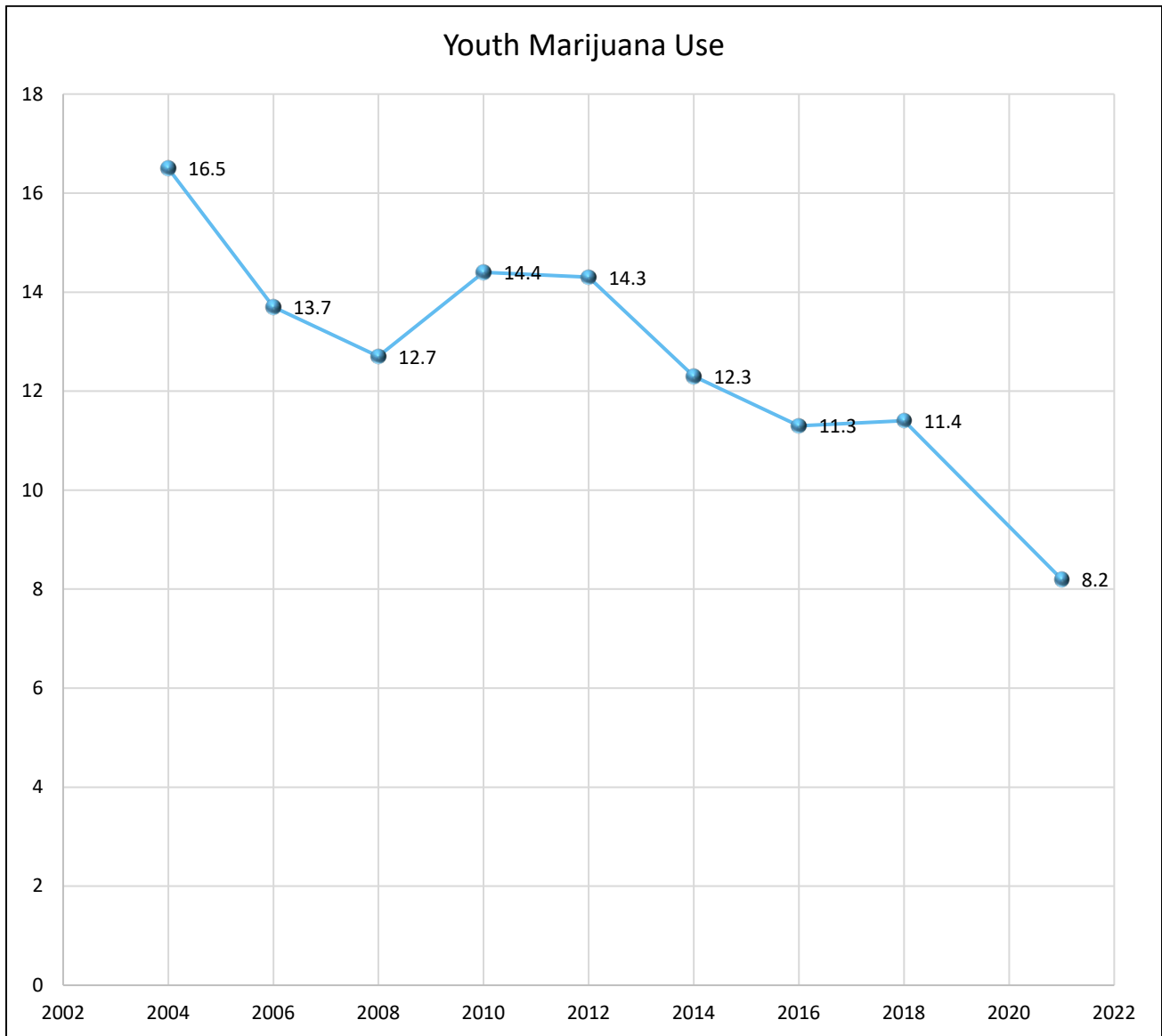


Youth Marijuana Use

Question: On how many occasions (if any) have you used marijuana in the past 30 days?
Percent answering one or more times.

- In 2021, Kentucky (8.2%) had a lower youth marijuana use percentage than the U.S. (15.8%).

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022.

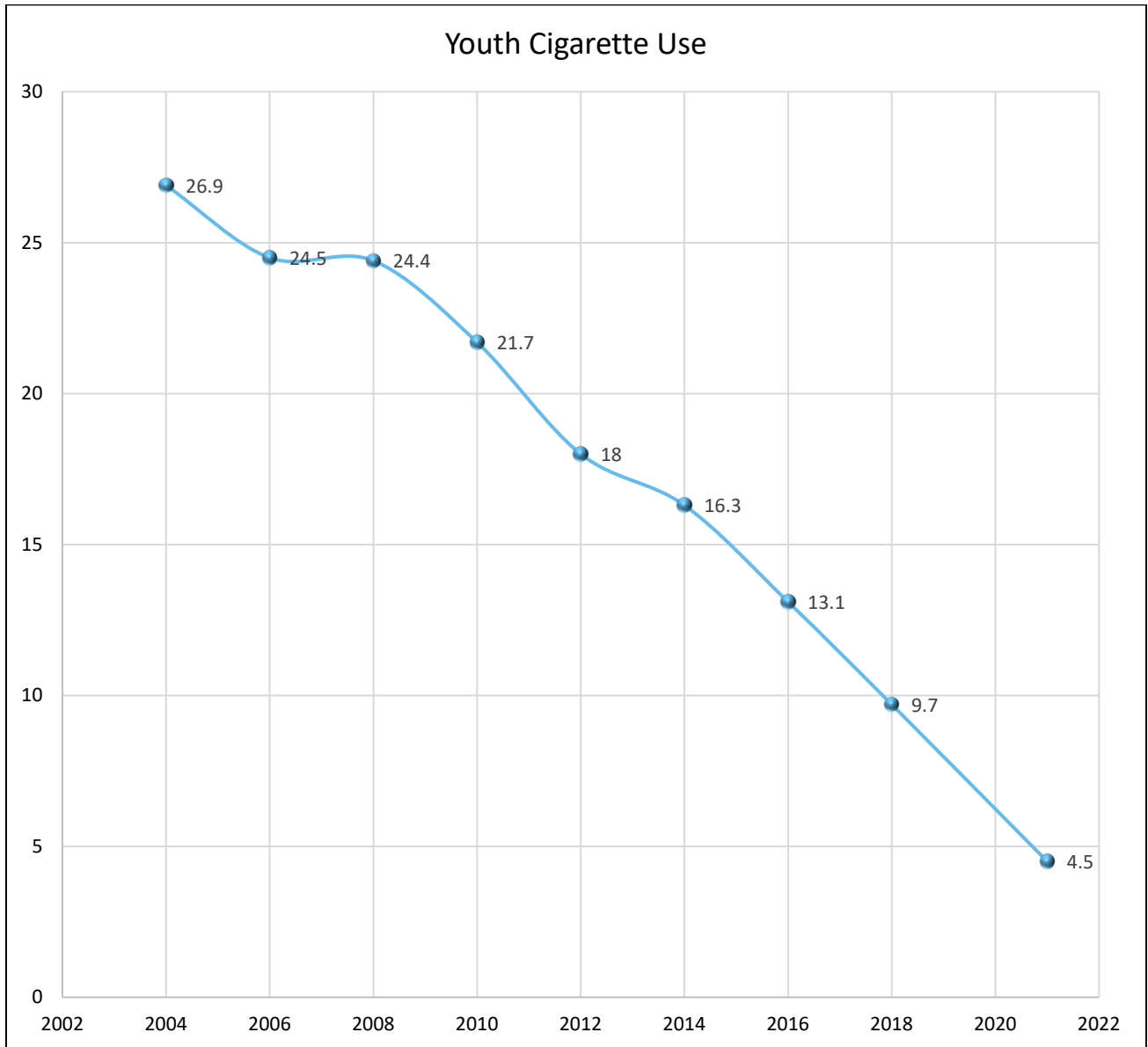


Youth Cigarette Use

Question: How frequently (if at all) have you smoked cigarettes during the past 30 days?
Percent smoking one or more times in the past 30 days.

- In 2021, Kentucky (4.5%) had a higher youth cigarette use percentage than the U.S. (3.8%).

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022.

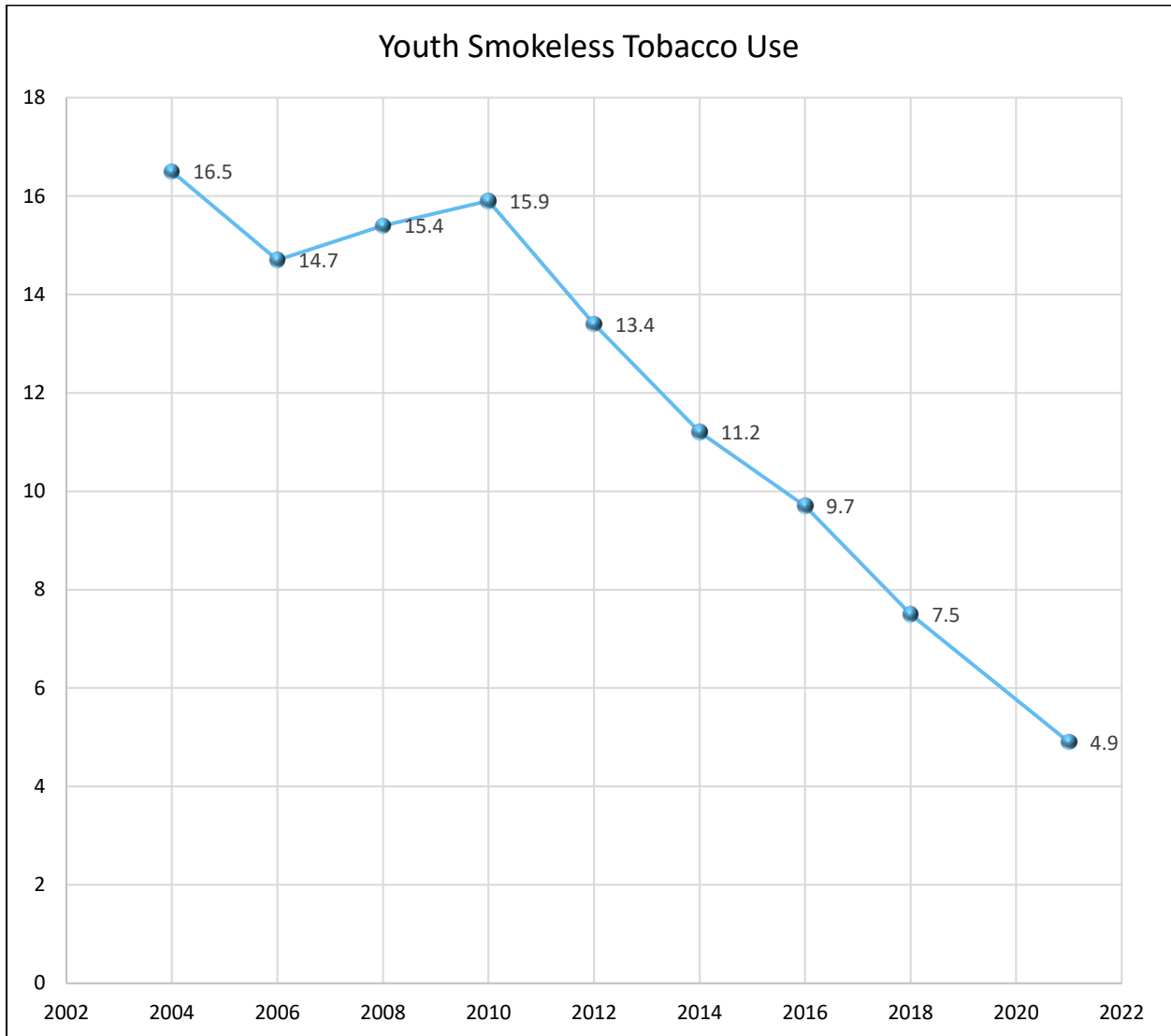


Youth Smokeless Tobacco Use

Question: On how many occasions (if any) have you used smokeless tobacco in the past 30 days?
Percent answering one or more times in the past 30 days.

- In 2021, Kentucky (4.9%) had a higher youth smokeless tobacco use percentage than the U.S. (2.5%).

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022.

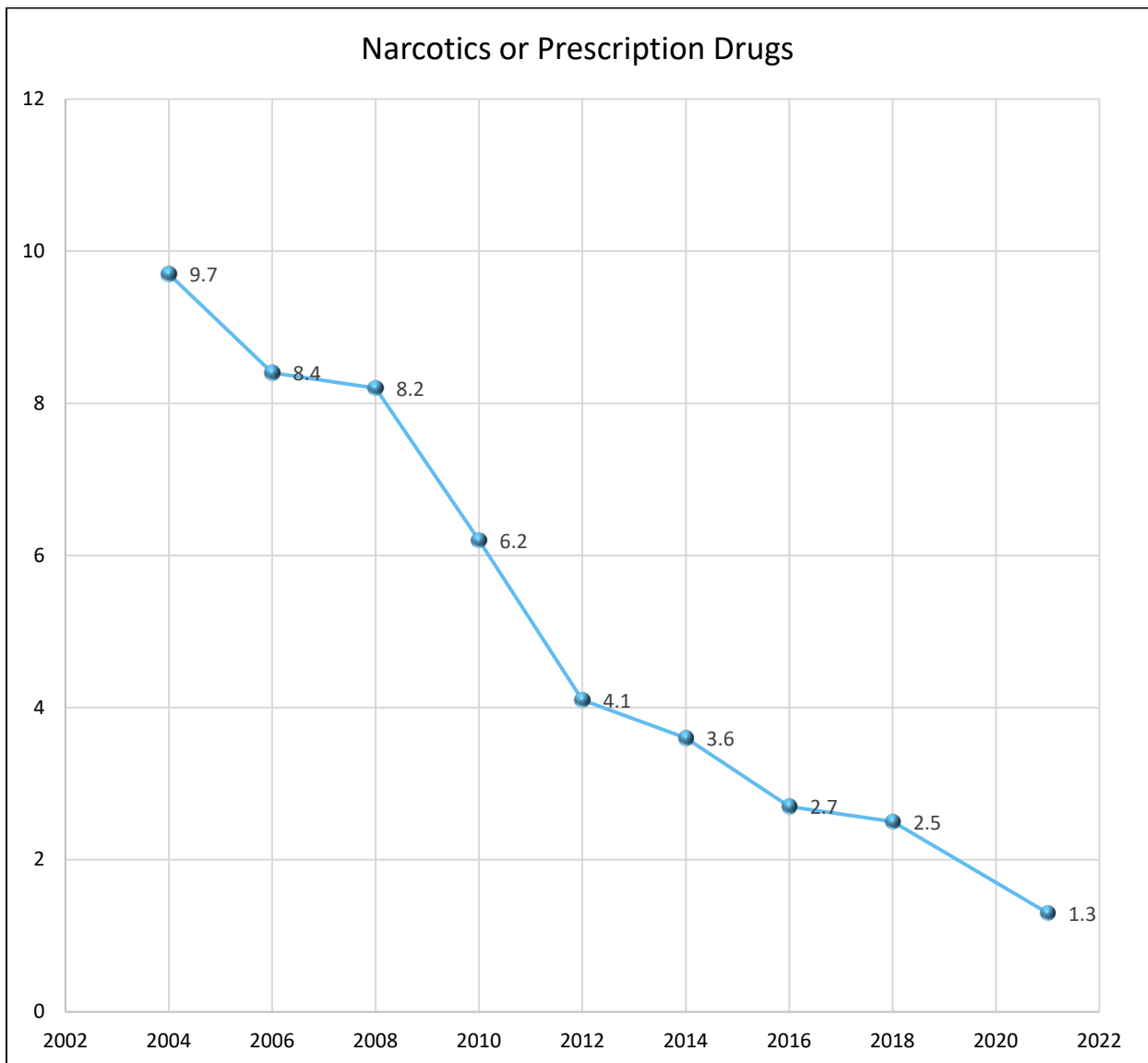


Youth Opioid Use

Question: On how many occasions (if any) have you taken narcotics or drugs that require a doctor's prescription without a doctor telling you to take them in the past 12 months? *Percent answering one or more times in the past 30 days.*

- In 2021, Kentucky (1.3%) had a lower youth opioid use percentage than the U.S. (6.0%).

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022.

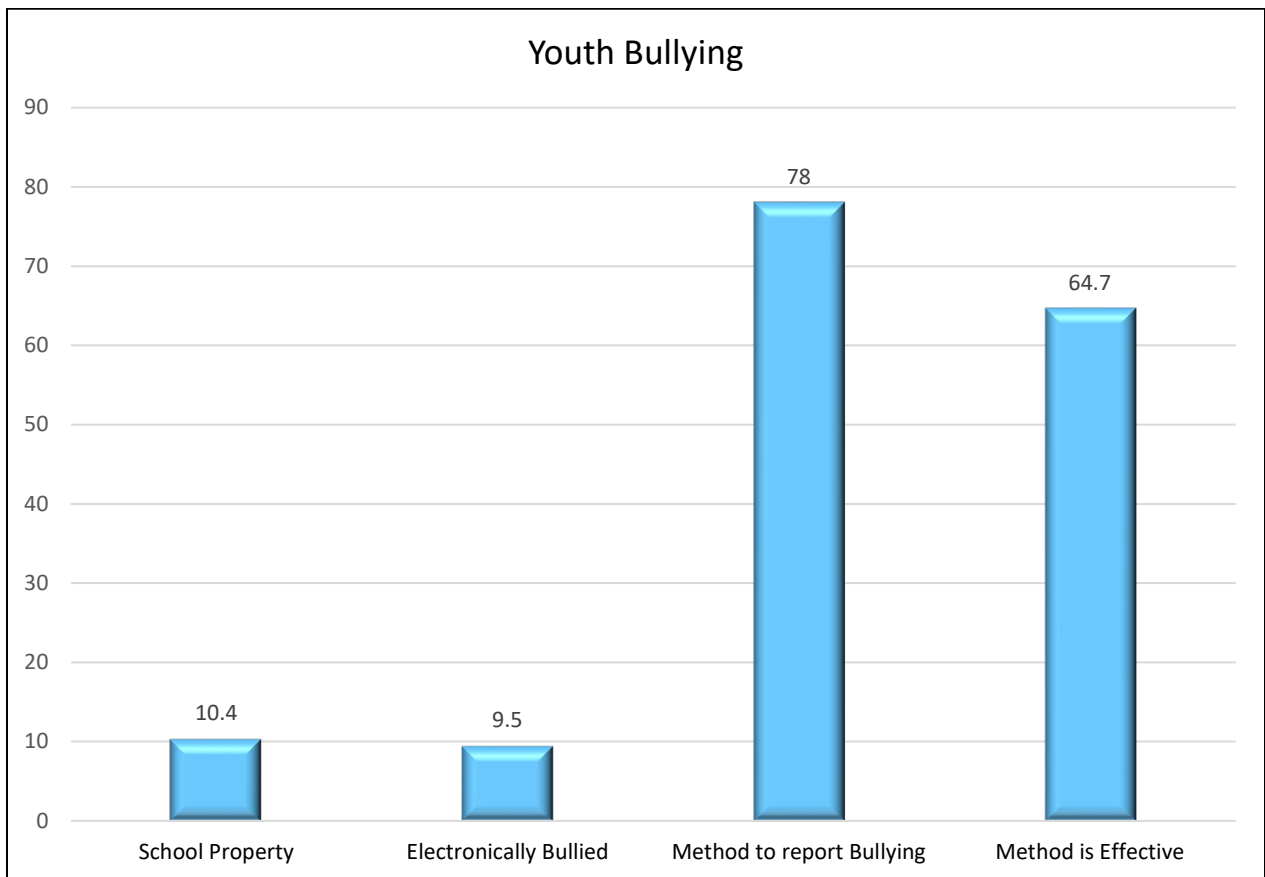


Youth Bullying

Question: Percent responding 'yes' to the following questions:

- During the past year, have you ever been bullied on school property?
 - During the past year, have you ever been electronically bullied?
 - Does your school have a way to report bullying or harassment?
 - If your school does have a way to report bullying or harassment, is this reporting method effective?
- In 2021, Kentucky (10.4%) had a lower youth school property bullying percentage than the U.S. (15.0%).
 - In 2021, Kentucky (9.5%) had a lower youth electronically bullying use percentage than the U.S. (15.9%).

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022.



Youth Suicide and Self-Harm

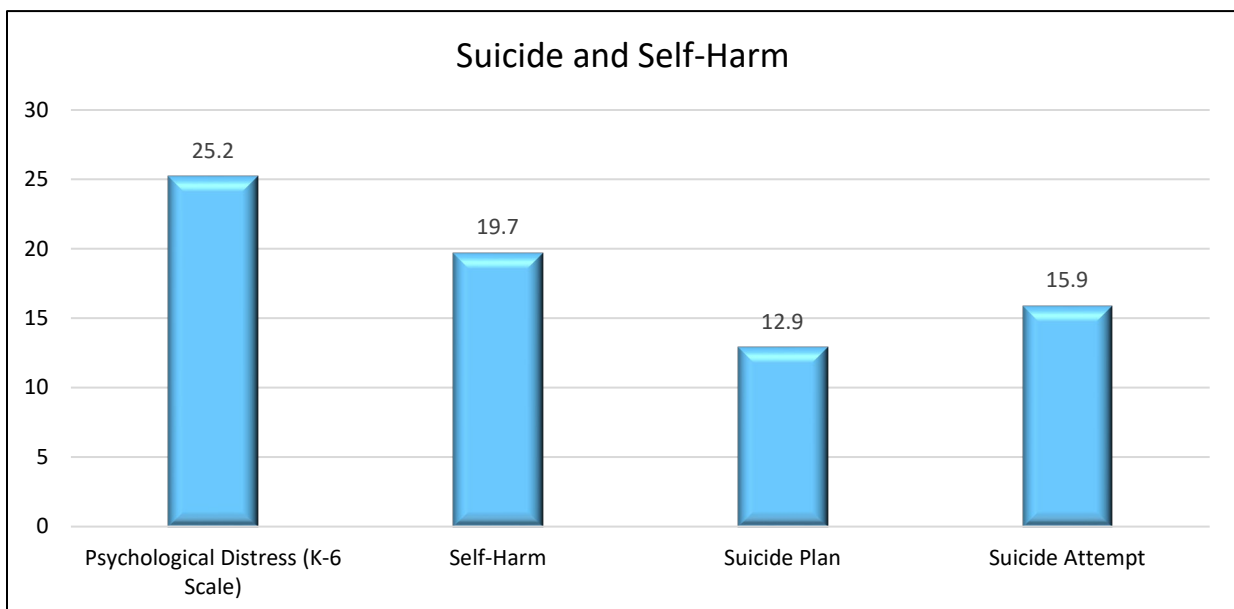
The K6 scale is a clinically validated brief screening scale for non-specific psychological distress, like depression and anxiety. It is comprised of the following questions with a Likert scale rating ranging from none of the time to all of the time.

- During the past 30 days, about how often did you feel nervous?
- During the past 30 days, about how often did you feel hopeless?
- During the past 30 days, about how often did you feel restless or fidgety?
- During the past 30 days, about how often did you feel so depressed that nothing could cheer you up?
- During the past 30 days, about how often did you feel that everything was an effort?
- During the past 30 days, about how often did you feel worthless?

* Primary data source: Kentucky Incentives for Prevention (KIP), 2004-2022

Percent responding 'yes' to the following questions:

- Serious psychological distress: a cumulative score of 19 or higher on the K-6 Scale
 - Have you ever cut or harmed yourself on purpose?
 - During the past 12 months, did you make a plan about how you would attempt suicide?
 - During the past 12 months, did you ever seriously consider attempting suicide?
- In 2021, Kentucky (15.9%) had a lower youth suicide attempt use percentage than the U.S. (22.2%).
- In 2021, Kentucky (12.9%) had a lower youth suicide plan percentage than the U.S. (17.6%).



Youth Immunizations

Kindergarten		
	% Compliance	Goal (HP2020 target)
4+DTaP	90.60%	95% or greater for four or more DTaP, three or more polio, three or more HepB, two MMR, and two varicella
3+Polio	91.20%	
3+HepB	90.70%	
2MMR*	90.10%	
2 Varicella*	89.80%	
2 Hep A	90.40%	85% or greater for two HepA
Seventh Grade		
	% Compliance	Goal (HP2020 target)
3+ HepB	95.90%	95% or greater for three or more HepB and two MMR
2MMR*	96.10%	
2 Varicella*	95.30%	90% or greater for two varicella
1 Tdap	84.60%	80% or greater for one Tdap and one MenACWY
1 or 2 MenACWY	82.70%	
2 Hep A	92.90%	85% or greater for two HepA
Eleventh Grade		
	% Compliance	Goal (HP2020 target)
3+ HepB	94.9%	95% or greater for two MMR and three or more HepB
2MMR*	95.40%	
2 Varicella*	94.00%	90% or greater for two varicella
1 Tdap	92.90%	80% or greater for one Tdap and two MenACWY
1 or 2 MenACWY	73.40%	
2 Hep A	90.80%	85% or greater for two HepA
*The number of MMR and varicella doses is dependent on a child's age. Children aged 19 through 47 months are required to have 1 dose of MMR and 1 dose of Varicella, while children aged 48 months and older are required to have 2 doses of MMR and 2 doses of varicella.		
**The number of MenACWY doses is dependent on a child's age. Children aged 16 or older are required to have 2 doses of the MenACWY vaccine.		
Source: Kentucky Annual School Immunization Survey, 2022-2023		
Immunization certificates were documented in 95.3% of kindergarteners, 97.8% of seventh graders and 97.4% of eleventh graders.		

Social Determinants of Health

According to the World Health Organization, [social determinants of health](#) (SDOH) are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems. SDOH has an important influence on health inequities, the unfair and avoidable differences in health status seen within and between countries. In countries with all income levels, health and illness follow a social gradient: the lower the socioeconomic position, the worse the health. Throughout the SHA, data collected has been examined through a SDOH lens, including via education and income status. Data has been provided regarding unemployment status, homeownership, volunteerism and adverse childhood experiences. In addition, more data on the SDOH was compiled and is listed in this section, including air pollution, severe housing problems, children in poverty, food environment index and social associations. Regarding additional health equity resources, the Kentucky Minority Health Status Report provides a more detailed overview of the health status of racial and ethnic minorities in Kentucky and how the social determinants disproportionately affect minorities when compared to the population at large. You can also view the Social Vulnerability Index [2016-2020 household characteristics](#).

Community Assets and Resources

Kentucky has many health challenges, health inequities and SDOH. Many community assets and resources in the Commonwealth can be leveraged to help address these.

Kentucky is home to seven National Parks [[Kentucky \(U.S. National Park Service\) \(nps.gov\)](#)], 45 Kentucky State Parks ([Kentucky State Parks | Ky Parks](#)) and one Interstate Park (40 of these parks have hiking and/or bicycling trails), along with numerous other city and county parks. Bike, hiking, rail and horse trails are available throughout the state. There are 84 miles of [rail trails](#) in Kentucky that offer biking and hiking, and according to Kentucky Tourism, there are 123 [horseback riding trails](#). Kentucky ranks 37th out of 50 states for bike-ability (additional information found [here](#)). There are over 80 approved local bicycle/pedestrian master plans ([Bicycle and Pedestrian Plans | KYTC](#)) in Kentucky.

The Active Living portion of the State Physical Activity and Nutrition Program (SPAN) has worked with 45 individual walk/bike facility projects since May 2019. This work includes guidance on design, feasibility studies, guidance and/or direct authorship for grants and other funding opportunities and facilitation of planning meetings. Some of these projects are now fully constructed. The Active Living Program utilizes partnerships with the Kentucky Transportation Cabinet (KYTC), the Kentucky State Parks, the Kentucky Office of Federal Highways, Bike Walk Kentucky [501 © (3)], the Kentucky Area Development District Offices and many other state, regional, local agencies and organizations.

Kentucky has over 74,000 miles of state-maintained [roadways](#); there are an estimated 93,000 miles of total roadways in Kentucky. Of these state-maintained roadway routes, there are over 12,000 miles of sidewalks (collected in the state GIS inventory). Per our state transportation policy ([Complete Streets Policy](#)), once constructed, pedestrian and bicycle facility maintenance is the responsibility of the local

government. Maintenance for pedestrian facilities in unincorporated small rural areas is subject to available KYTC funding. The average age of the sidewalk network in Kentucky is over 50 years old. Roadways and walk/bike facilities are constantly being updated, improved and constructed, but many areas are still without sidewalks, or they are in poor condition. While the number of public transportation providers has increased over the years, some counties in the state still have no access to public transportation.

The SPAN program looks at many community assets for Kentucky. As of May 2023, there are 157 farmer's markets in Kentucky (Source: Kentucky Department of Agriculture). The Community Farm Alliance reported that 47 accept double dollars and 30 accept the Supplemental Nutrition Assistance Program (SNAP). Five retail locations accept SNAP fruit and vegetable vouchers for Double Dollars, and five community markets do. The Community Farm Alliance reported 35 of those Farmer's Markets participate in WIC, and 46 participate in senior voucher programs. Feeding Kentucky reported seven food banks that provide food to over 800 food pantries across Kentucky. [Go NAPSACC](#) works with childcare providers to improve the health of young children through practices, policies and environments that instill habits supporting lifelong health and well-being. There are 251 daycare centers enrolled in Go NAPSACC, an online professional development tool that helps Kentucky child care centers provide care in accordance to the new state regulations cited at [922 KAR 2:120](#). This regulation for childcare centers strengthens policies around physical activity, nutrition, screen time and sugar-sweetened beverages; SPAN reviewed and provided feedback on the regulation to be consistent with national guidelines.

The SPAN program is also working with the Kentucky River District Health Department to implement a breastfeeding project to identify barriers to breastfeeding and develop a plan to increase breastfeeding initiation. Low rates of breastfeeding plague this region, and this supplemental funding is providing them with the means to develop a plan to increase breastfeeding rates. Food security is also a major issue, and the SPAN program works with several organizations in Louisville and western Kentucky to culturally address nutrition policy through the lens of health equity. Outlining food policy guidelines yet allowing communities to develop strategies that work for their population is the best way to gain buy-in for these policies. South and west Louisville are heavily urban areas and require a different strategy than a more rural area such as Todd County/Elkton. However, the goal remains to decrease food insecurity and promote health; the SPAN program provides technical assistance with those population differences in mind.

Many policies ultimately affect SDOH and Kentuckian's health. As of May 2023, there are 43 municipalities with a comprehensive (meaning without exemptions) smoke-free ordinance; this protects 38.2% of Kentucky's population (source: [Kentucky Center for Smoke-free Policy](#)). In Kentucky, law enforcement can confiscate tobacco products, including e-cigarettes, from anyone under the age of 21 without issuing a citation to them. Kentucky's law (KRS 438.311) has changed to focus less on youth tobacco use or possession and more on youth access to tobacco products. Law enforcement may still enforce age-of-sale laws by stopping retailers from illegally selling tobacco products to people under 21. In Kentucky, commercial and public health insurance plans must cover all forms of FDA-approved cessation medication and counseling without requiring a co-pay (source: Legislative Resource Commission, LRC). This does not include Medicare, but it was a big policy win for the state. The current cigarette excise tax is \$1.10 (increased from \$0.60 in 2018; source: LRC). In Kentucky school districts, only four school districts do not have a comprehensive tobacco-free policy; 97.7% have a policy. There are over 90 campuses across 30 colleges and universities in the state that are 100% smoke-free inside

and out, at minimum [source: [Smoke-free and Tobacco-Free U.S. and Tribal Colleges and Universities \(no-smoke.org\)](https://www.no-smoke.org/)].

The House joint resolution in 2021 directing the Cabinet for Health and Family Services to establish a workgroup to assess the feasibility of implementing a bridge insurance program, review current temporary assistance for needy families' expenditures and consider opportunities for public-private partnerships to better meet the needs of public assistance beneficiaries was passed by the Kentucky General Assembly and signed by Governor Andy Beshear on March 25, 2021. The findings and recommendations were submitted to the Interim Joint Committee on Health, Welfare and Family Services on December 27, 2021.

The Kentucky Prescription Assistance Program (KPAP) served 4,800 patients in 2022. The average wholesale price (AWP) of medications that the KPAP saved citizens of Kentucky who qualified was \$51,521,692. The KPAP has advocates who are over the age of 18, and staff train the advocates on how to use Drug Assistant software to help people obtain prescription assistance for their medications. The KPAP teaches the advocates how to do the prescription assistance process from beginning to end, and advocates come from many different careers/backgrounds, including medical personnel, clinics, hospitals, social work/community agencies and community health workers. The KPAP Hotline can be reached at 1-800-633-8100. The Hotline is open Monday through Friday from 8am to 4pm. If a prescription assistance program is unavailable for a specific medication, the KPAP will work to find other available resources.

The Asthma Program in the Division of Prevention and Quality Improvement within the KDPH focuses on decreasing asthma hospitalization rates and decreasing missed school days. Policies that can directly improve asthma management in Kentucky are focused on clinical, environmental and community-based strategies. Clinical policy strategies include increased uptake of the evidence-based guidelines as updated in 2021, access to school nurses and school/community-based clinics, adoption of stock albuterol policy in schools, use of asthma action plans, increasing influenza immunization rates for adults and children, no co-pays for inhalers and increased access to asthma self-management classes and smoking cessation tools and resources. Most people with asthma also have an allergy component. Therefore, environmental policies are extremely important in decreasing asthma attacks. Environmental policies include comprehensive smoke-free communities including schools, workplaces, restaurants and apartments, reducing school bus idling and discharge of other particulate matter in the air, increasing access to healthy homes training to reduce asthma triggers and improvement of housing for the most vulnerable populations.

Chronic Obstructive Pulmonary Disease (COPD) can be linked to poorly controlled asthma in childhood, smoking, repeated exposure to respiratory illnesses, some genetic components and certain occupations with high exposure to environmental hazards. COPD is one of the leading causes of death in Kentucky and one of the leading causes of hospitalization and emergency room visits. Many of the same policy strategies that will reduce the asthma burden in Kentucky will also reduce COPD rates and mortality. Early clinical diagnosis and treatment, as well as reduction of environmental exposures, are the keys to reducing COPD burden.

The Kentucky Voices for Health Community Assets and Resources

The Kentucky Voices for Health (KVH) focuses on health equity and SDOH. On their website, many different healthcare stories are featured on various topics such as the Affordable Care Act, COVID-19, medical topics and transportation. The KDPH chose a select few stories to highlight within this document with themes of access to care and housing stability, and the summaries of these individuals' stories and quotes are below. Visit <https://kyvoicesforhealth.org/stories/> to see more.

[Lisa Garrison's Healthcare Story:](#)

An employee for one of Kentucky's managed care organizations (MCOs) has previously lived the life of a Medicaid recipient. She can relate through lived experience, where if you're healthy or your kids are healthy, you don't think about having access to care. As soon as something happens to you or your child, and you don't have access to care because you can't pay for it, it can be devastating. She can go out in the community and tell people Medicaid works from experience. Access to care through Medicaid is crucial and helps with social determinants of health. Even things like getting access to good food, diapers and adoption services for kinship care can be services Medicaid and MCOs assist with. People in those companies can help you navigate. She advises that people need to take advantage of the opportunity if they qualify because they may end up in a situation they can't control. Lived experience gives her great empathy for the choices people must make in that situation. Sometimes, for your family to be safe and secure, you have to accept what is provided to you.

"When you think you're healthy, something can happen, and you just don't know what's going on, and all of a sudden you're in the hospital, and if you don't have access to care because you don't have the way to pay for it then you can be devastated."

"...Medicaid works. You having access to care through Medicaid is crucial to your health, and it helps you with your social determinants of health. It gives you access to good food...there are ways your MCOs can help you there...there are ways that your MCOs can help you with getting diapers for your children...help you with adoption services."

"If you don't have access to care because you don't have the way to pay for it then you can be devastated...you having access to care through Medicaid is crucial to your health, and it helps you with your social determinants of health, it gives you access to good food...there are ways your MCOs can help you."

[Clark Williams Healthcare Story:](#)

A reverend from Lexington, Kentucky, shares that one in three renters are not confident they can sustain their homes due to the potential for eviction. Reverend Clark Williams says that the U.S. is the most prosperous country in the world, the stock market is hitting records, and there is a lot of wealth being created. But 1 in 3 renters are unsure they will have a roof over their heads. The pandemic has shown where the disparities are. He shares his belief that it's about money – in terms of continuing to keep it concentrated in a few hands; it's not that we can't afford to share it with the less vulnerable. He also shares that as a reverend, he recognizes that all of us eventually will end up in a vulnerable group, e.g., maybe you have money, but then your health fails, and you become vulnerable and lose financial resources. Everyone needs grace and for someone to be thinking about them. We've got to keep this in mind.

“One in three renters are not confident that they will be able to sustain their homes due to the potential for eviction...and that’s unconscionable.”

“In most cases...be less costly to do these things that will help people and make people less vulnerable than to not do them and continue to keep people vulnerable.”

[Kelly Taulbee, Anderson County:](#)

An employee of Kentucky Voices for Health, Kelly Taulbee, shared how valuable and important prenatal visits are as she was experiencing a high-risk pregnancy at the time of the video’s creation. She places high value on being able to see the doctor regularly to ensure she and her children are going to be okay. Everyone should have the same access to affordable and comprehensive care whether, it’s from a private insurer or Medicaid. Prenatal and postpartum care is essential. Medicaid covers more than 50% of Kentucky’s births, and coverage was recently extended 12 months postpartum to nearly 10,000 moms and their babies who previously did not have care beyond 60 days after birth. The bottom line is that health should not be determined by our wealth, who we are, where we live or the color of our skin. Why wouldn’t we want everyone to have care who needs it?

“Bottom line, our health should not be determined by our wealth, who you are, how much you make, where you live, the color of your skin should not hinder in any way your ability to access care.”

“Mothers who seek prenatal and postpartum care have longer, healthier lives and can identify complications sooner get treatment quicker. Why wouldn’t we want everyone to have that?”

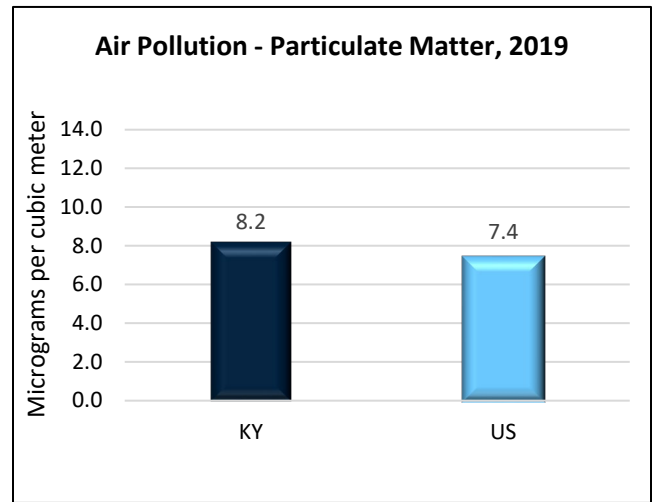
Air Pollution

Definition of Indicator: Average daily density of fine particulate matter in micrograms per cubic meter.

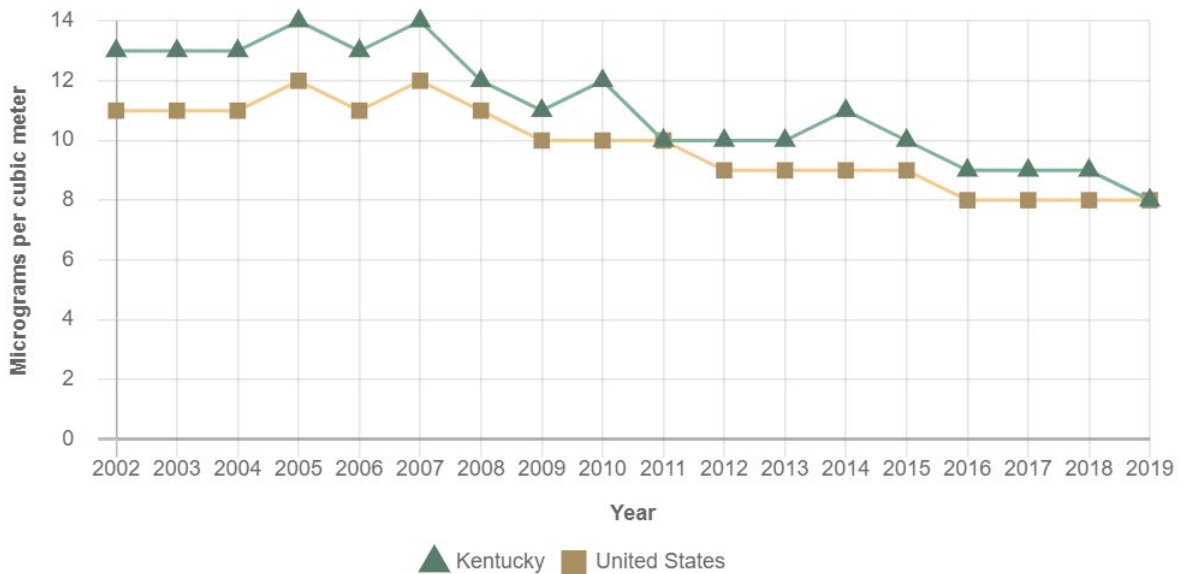
Who is at risk in Kentucky?

- Air pollution is higher in Kentucky (8.2) than in the U.S. (7.4).
- Jefferson County, Kentucky, has the highest levels of air pollution (10.5), while Carter County, Kentucky, has the lowest levels of air pollution (5.7).

* Secondary data source: County Health Rankings and Roadmaps.



Air Pollution - Particulate Matter in Kentucky
Average daily density of fine particulate matter: state and national trends



Notes:
Data in this trend graph are taken from the Environmental Public Health Tracking Network, and will not match data used in the 2014-2016 Rankings.

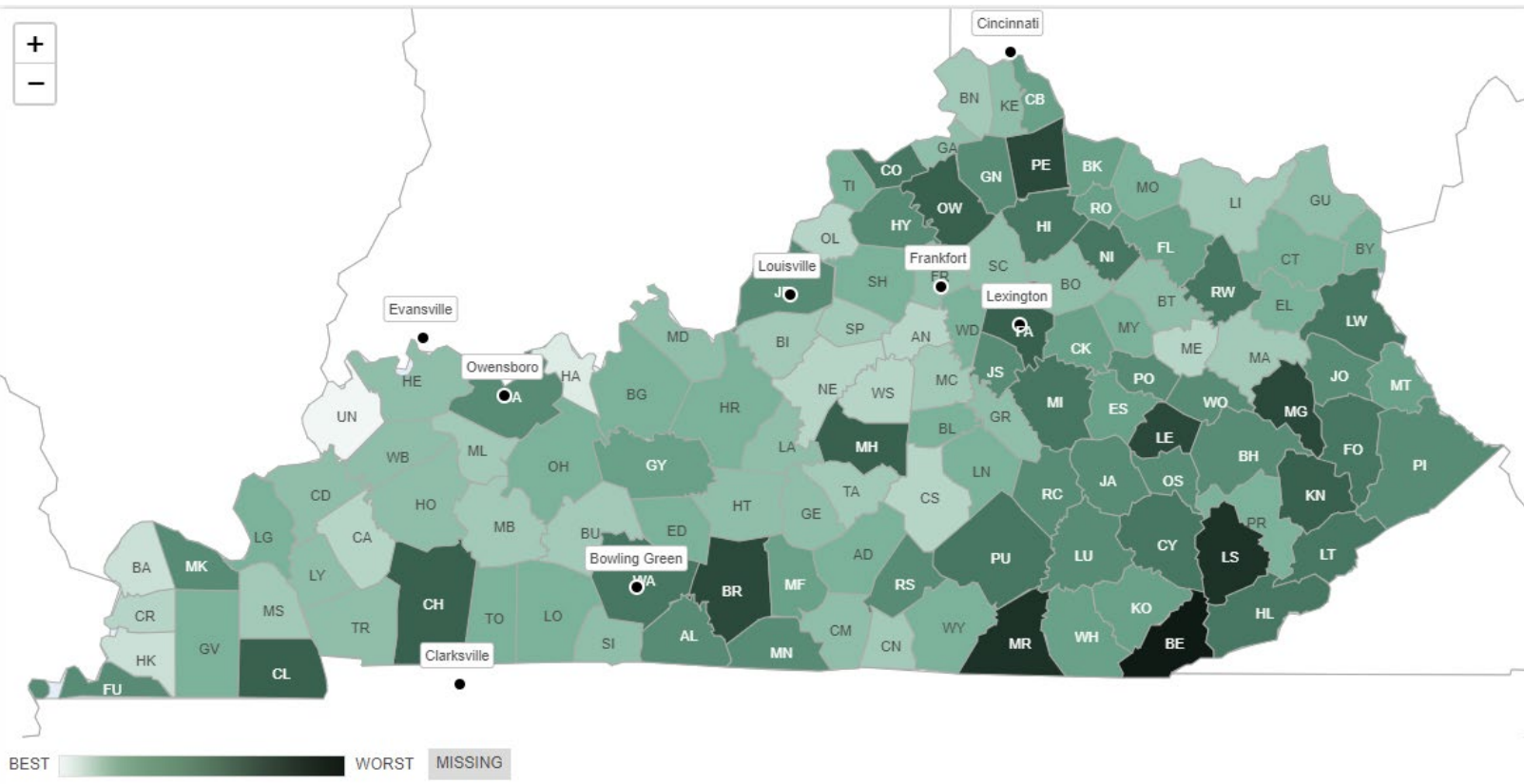
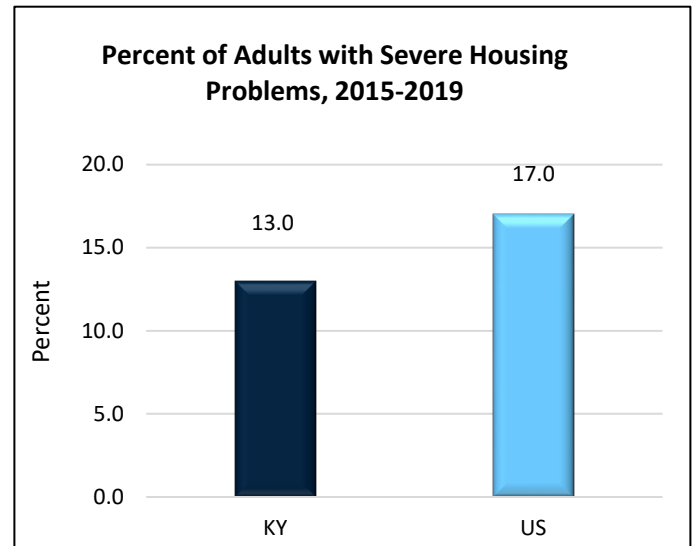
Severe Housing Problems

Definition of Indicator: Households with at least one of four housing problems. The four housing problems are high housing costs, lack of kitchen facilities, overcrowding or lack of plumbing facilities.

Who is at risk in Kentucky?

- Kentucky had a lower percentage (13%) of severe housing problems in years 2015-2019 than the US percentage (17%).
- The county in Kentucky with the worst housing problems was Bell County at 19%, while Union County showed the best housing at 6%.

* Secondary data source: County Health Rankings and Roadmaps.



Children in Poverty

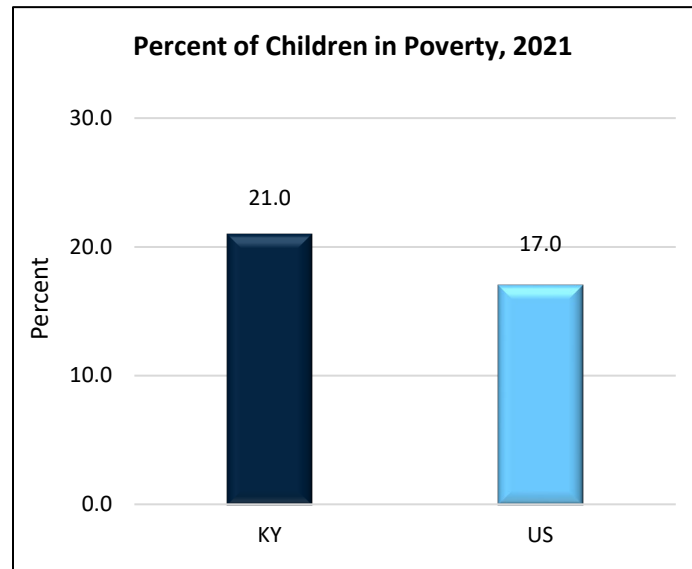
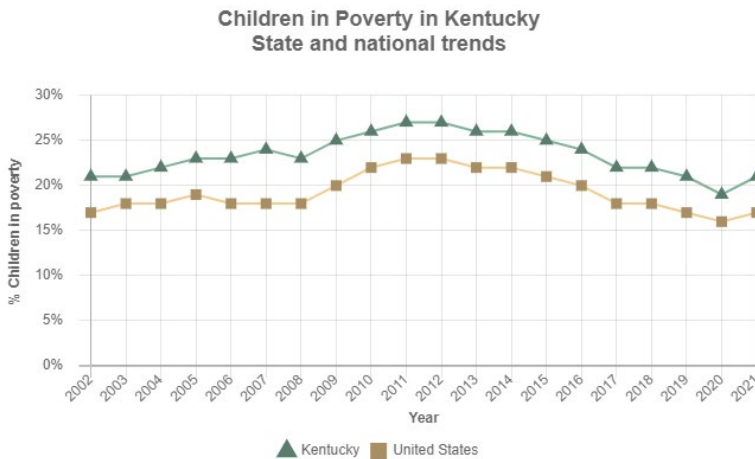
Definition of Indicator: Those under the age of 18 living in poverty.

Children in poverty capture an upstream measure of poverty that assesses current and future health risks.

Who is at risk in Kentucky?

- Kentucky had a higher percentage (21%) of children in poverty in 2021 than the US percentage (17%).
- In Kentucky, Magoffin County has the highest percentage (47%) of children in poverty. Oldham County has the lowest percentage (5%) of children in poverty.
- Children in poverty may experience lasting effects on academic achievement, health and income into adulthood.
- Children living in low-income households have an increased risk of injury due to unsafe environments and are susceptible to more frequent and severe chronic conditions and their complications, such as asthma, obesity, diabetes, ADHD, behavior disorders and anxiety, than children living in high-income households.

* Secondary data source: County Health Rankings and Roadmaps.



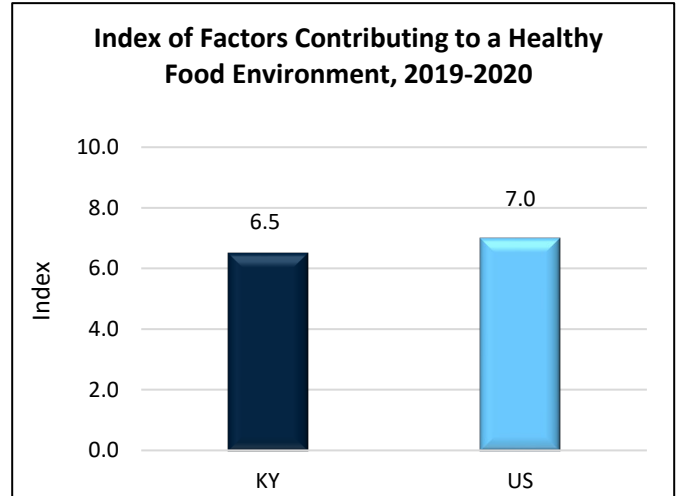
Notes:
Prior to 2005, Children in poverty was based on the Current Population Survey; beginning in 2005, it was based on the American Community Survey.

Food Environment Index

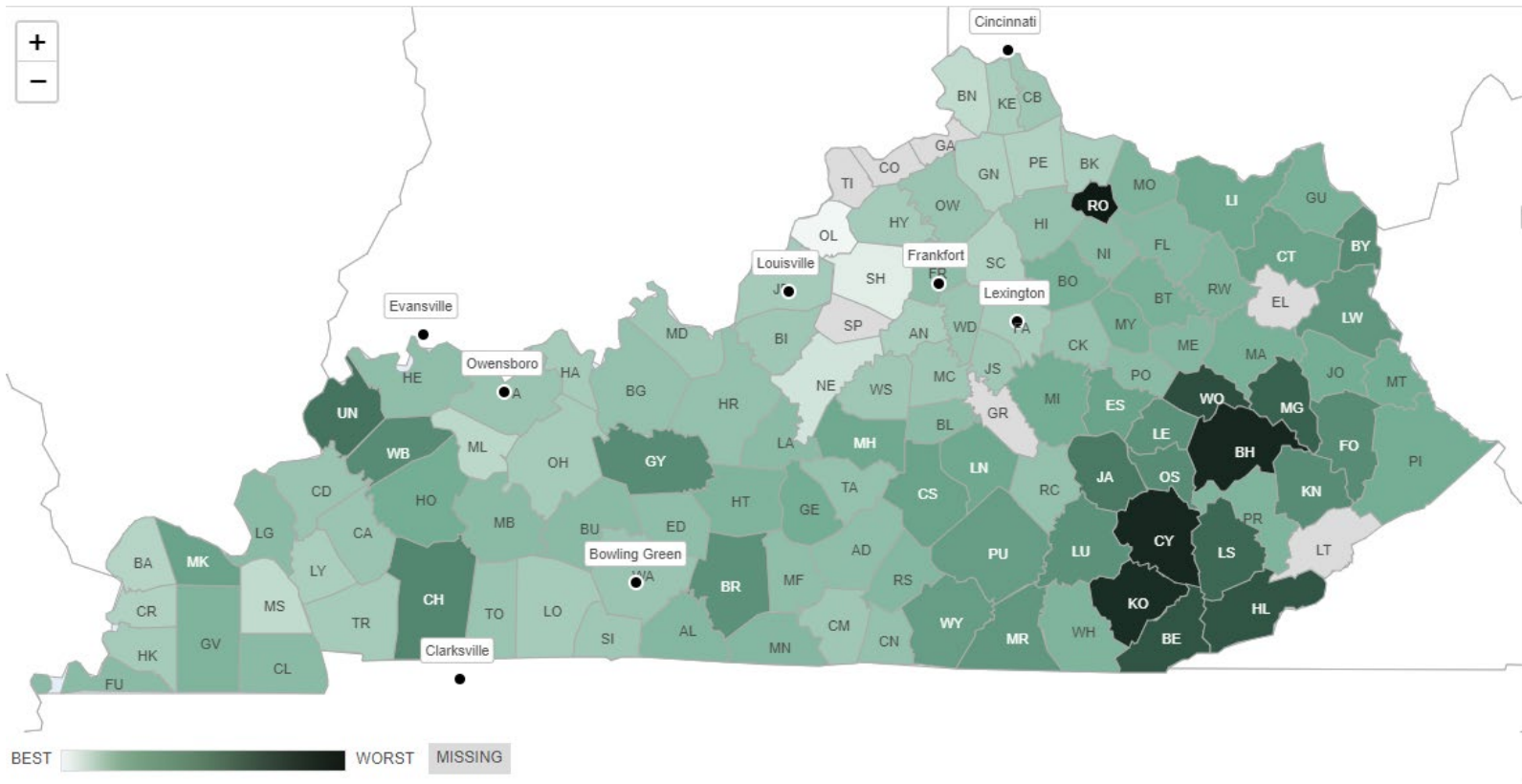
Definition of Indicator: Index of factors that contribute to a healthy food environment, from 0 (worst) to 10 (best). The County Health Rankings measure of the food environment accounts for both proximity to healthy foods and income. This measure includes access to healthy foods by considering the distance an individual lives from a grocery store or supermarket, locations for health food purchases in most communities and the inability to access healthy food because of cost barriers.

Who is at risk in Kentucky?

- Kentucky had a lower index (6.5) of healthy food environments in 2019 and 2020 than the US (7).
- In Kentucky, Robertson County had the worst index (4.5) of food insecurity.



* Secondary data source: County Health Rankings and Roadmaps.



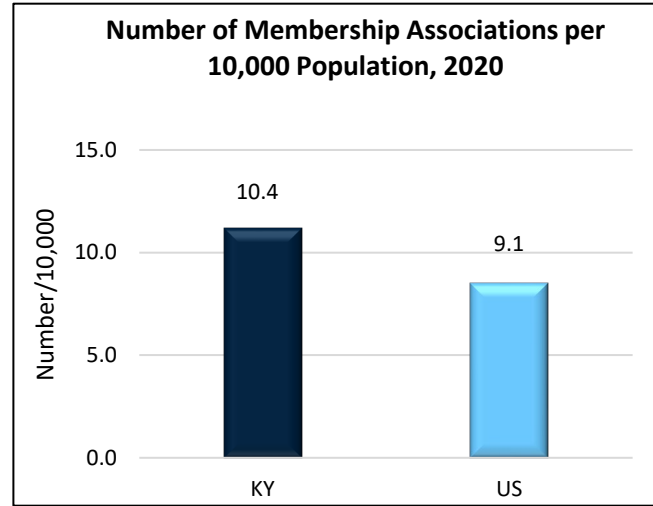
Social Associations

Definition of Indicator: The number of membership associations per 10,000 population.

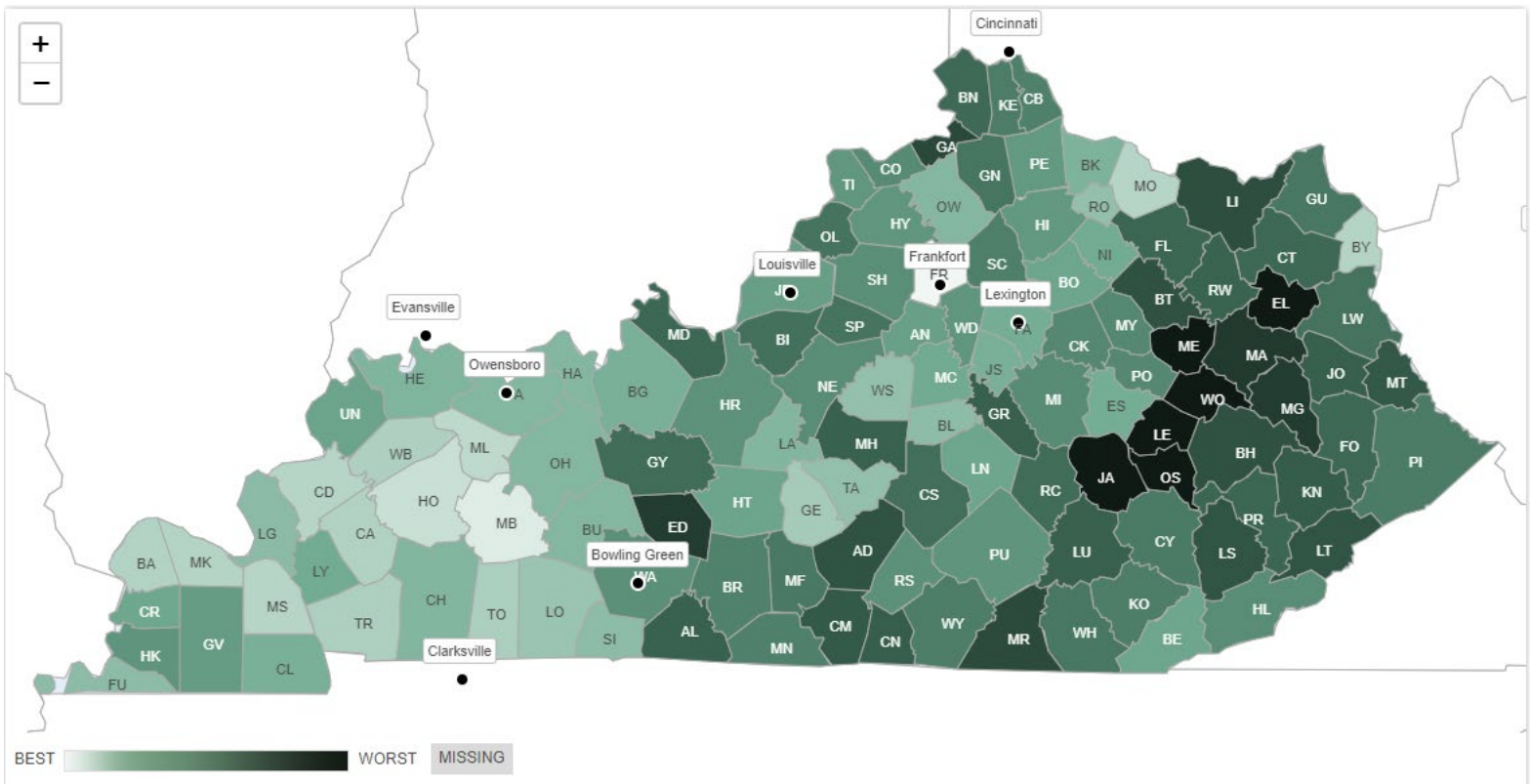
Memberships include civic, religious, political, sports and professional organizations. According to County Health Rankings, higher degrees of civic participation are linked to better health outcomes. Evidence shows that the more you get involved, the better your health. That is true for individuals and communities.

Who is at risk in Kentucky?

- Kentucky had a higher number per 10,000 population (10.4) of social associations in 2020 than in the US (9.1).
- In Kentucky, the counties with zero (0) associations per 10,000 population were Elliott, Jackson, Lee, Menifee, Owsley and Wolfe counties.



* Secondary data source: County Health Rankings and Roadmaps.



Appendix 1: America's Health Rankings Report

America's Health Rankings Annual Report from the United Health Foundation		
2022 State Rank for Kentucky	2017 State Rank for Kentucky	Measure
49	*	Dental Visit (% ages 18+)
49	*	Exercise (% ages 18+)
49	49	Drug Deaths (deaths per 100,000 population)
48	*	Insufficient Sleep (% ages 18+)
48	*	E-cigarette Use (% ages 18+)
48	48	Frequent Physical Distress (% ages 18+)
48	*	Multiple Chronic Conditions (% ages 18+)
48	44	Obesity (% ages 18+)
47	*(2017 number based on 1,000 beneficiaries)	Preventable Hospitalizations (discharges per 100,000 Medicare beneficiaries)
46	*	Adverse Childhood Experiences (% ages 0-17)
46	*	Volunteerism (% ages 16+)
46	47	Premature Death (years lost before age 75 per 100,000 population)
45	46	Physical Inactivity (% ages 18+)
45	*	Teen Births (births per 100,000 females ages 15-19)
45	49	Smoking (% ages 18+)
45	48	Frequent Mental Distress (% ages 18+)
44	*	High-speed Internet (% of household)
43	42	Overall Rank out of 50 states
42	*	Food Insecurity (% of households)
42	*	Flu Vaccination (% ages 18+)
41	*	Drive Alone to work (% of workers ages 16+)
41	*	Non-Medical Drug Use (% ages 18+)
40	*	Economic Hardship Index (index from 1-100)
39	*	Income Inequality (80/20 ratio)
38	35	Occupational Fatalities (deaths per 100,000 workers)
37	38	Air Pollution (micrograms of fine particles per cubic meter)
37	*(2017 number based on females)	HPV Vaccination (% ages 13-17)
31	29	Public Health Funding (dollars per person)

America's Health Rankings Annual Report from the United Health Foundation		
2022 State Rank for Kentucky	2017 State Rank for Kentucky	Measure
31	*	Risk-screening Environmental Indicator Score (unitless score)
31	38	Low Birthweight (% of live births)
30	25	Dental Care providers (per 100,000 population)
30	*	High-risk HIV Behaviors (% ages 18+)
29	*	Fourth Grade Reading Proficiency (% of public school students)
28	27	Mental Health providers (per 100,000 population)
25	*	Avoided Care Due to Cost (% ages 18+)
23	*	Housing with Lead Risk (% of housing stock)
22	*(2017 number based on % of children aged 19-35 months)	Childhood Immunizations (% by age 24 months)
21	*	Voter Participation (% of U.S. Citizens ages 18+)
20	*	Residential Segregation-Black/White (index from 0-100)
20	*	Colorectal Cancer Screenings (% ages 50-75)
16	40	Primary Care providers (per 100,000 population)
16	14	Chlamydia (new cases per 100,000 population)
13	*	Severe Housing Problems (% of occupied housing units)
13	9	Uninsured (% of population)
13	*	Dedicated Health Care Provider (% Ages 18+)
11	7	Violent Crime (offenses per 100,000 populations)
11	*	Fruit and Vegetable Consumption (% ages 18+)
11	*	Low Birthweight Racial Disparity (ratio)
8	*	High School Graduation Racial Disparity (percentage point difference)
6	*	Premature Death Racial Disparity (ratio)
5	8	Excessive Drinking (% ages 18+)
4	8	High School Graduation (% of students)
1	*	Drinking Water Violations (% of community water systems)
1	*	Water Fluoridation (% of populations served)

Note: An asterisk (*) denotes data that was either not included in the 2017 ranking or was not comparable between 2017 and 2022.

Appendix 2: KY vs. US Comparison Table

2023 SHA topic	KY	US	Year of Data	Source of KY Data	Source of US Data
No Healthcare Coverage	4.3%	7.1%	2021	KyBRFS	U.S. Census
Alcohol Consumption: Binge Drinking	12.6%	15.4%	2021	KyBRFS	U.S. Census
No Leisure Time Physical Activity	30.5%	23.7%	2021	KyBRFS	U.S. Census
Tobacco Use	19.6%	14.4%	2021	KyBRFS	U.S. Census
General Health (fair or poor)	22.6%	14.8%	2021	KyBRFS	U.S. Census
Alzheimer's Disease	11.2%	8.5%	2020	KyBRFS	U.S. Census
Asthma	11.7%	9.8%	2021	KyBRFS	U.S. Census
Cancer Deaths	171.9	146.2	2019	Kentucky Cancer Registry	National Vital Statistics System
Coronary Heart Disease	6.1%	3.8%	2021	KyBRFS	U.S. Census
Heart Disease Deaths	301.0	161.5	2019	KY Office of Vital Statistics	CDC
COVID Case Fatality Rate	1.0%	1.7%	2020	KY COVID-19 Database	U.S. Census
Diabetes Disease	13.8%	10.9%	2021	KyBRFS	U.S. Census
Suicide Violent Injury Deaths	16.2	14.5	2021	KIPRC	CDC
Homicide Violent Injury Deaths	6.2	7.8	2021	KIPRC	CDC
Hepatitis C Virus Infection	4.4	1.6	2021	CDC	CDC
Human Immunodeficiency Virus	8.6	10.8	2021	CDC	CDC
Kidney Disease	24.9	16.4	2021	KY Office of Vital Statistics	CDC
Obesity	40.3%	33.9%	2021	KyBRFS	U.S. Census
Opioid deaths	39.9	28.1	2021	KIPRC	CDC
Oral Health: Dental Visits	42.8%	33.3%	2020	KyBRFS	U.S. Census
Poor Mental Health Days	17.9	14.6	2021	KyBRFS	U.S. Census
Septicemia	19.5	12.4	2021	KY Office of Vital Statistics	U.S. Census & CDC
Infant Mortality	5.9	5.4	2021	KY Office of Vital Statistics	U.S. Census
Neonatal Abstinence Syndrome	19.4	6.0	2021	NAS Registry	U.S. Census

2023 SHA topic	KY	US	Year of Data	Source of KY Data	Source of US Data
Smoking During Pregnancy	12.6	4.6	2021	KY Office of Vital Statistics	U.S. Census
Youth Obesity	19.6%	16.3%	2021	KyYRBS	CDC YRBS
High School Students Not Physically Active	15.9%	15.8%	2021	KyYRBS	YRBS
Youth Alcohol Use	13.0%	22.7%	2021	KIP	CDC YRBS
Youth Marijuana Use	8.2%	15.8%	2021	KIP	CDC YRBS
Youth Cigarette Use	4.5%	3.8%	2021	KIP	CDC YRBS
Youth Smokeless Tobacco Use	4.9%	2.5%	2021	KIP	CDC YRBS
Youth Narcotics or Prescription Drugs Use	1.3%	6.0%	2021	KIP	CDC YRBS
Youth School Property Bullying	10.4%	15.0%	2021	KIP	CDC YRBS
Youth Electronically Bullied	9.5%	15.9%	2021	KIP	CDC YRBS
Youth Suicide Attempt	15.9%	22.2%	2021	KIP	CDC YRBS
Youth Suicide Plan	12.9%	17.6%	2021	KIP	CDC YRBS
High School Vapor Product Use	8.1%	7.3%	2021	KyYRBS	YRBS
Teen Births	29	19	2020	CHR	CHR
Air Pollution: Particulate Matter	8.2	7.4	2019	County Health Rankings (CHR)	CHR
Severe Housing Problems	13.0%	17.0%	2015-2019	CHR	CHR
Children in Poverty	21.0%	17.0%	2021	CHR	CHR
Food Environment Index	6.5	7.0	2019-2020	CHR	CHR
Social Associations	10.4	9.1	2020	CHR	CHR

Note: Green shading demonstrates better performance, and red shading demonstrates worse performance in Kentucky when compared to U.S. data. Cancer Deaths, Heart Disease Deaths, Suicide and Homicide, Violent Injury Deaths, HIV, Kidney Disease, Opioid and Septicemia are reported at a rate per 100,000 people. Septicemia crude death rates for the U.S. were calculated using the U.S. Census data for the 2021 denominator (332,662,461 on January 1, 2022) and CDC total numbers of septicemia cases in 2021 by state (41,198). Hepatitis C Virus Infection is reported as number of cases. Poor Mental Health Days are reported as number of days. The CDC uses different methodologies, thereby making various adjustments to calculate the HIV incidence rates, the incidence rates calculated by CDC are 8.6 (based on 390 diagnoses) vs. 8.7 calculated by Kentucky HIV Surveillance (based on 393 new diagnoses). Infant Mortality, Neonatal Abstinence Syndrome and Smoking During Pregnancy is reported at rate/1,000 births. Air Pollution: Particulate Matter is reported as micrograms per cubic meter (PM2.5). The Food Environment Index is reported as an index of factors that contribute to a healthy food environment, from 0 (worst) to 10 (best). Social Associations is reported as the number of membership associations per 10,000 population. Teen births are reported as the number of births per 1,000 female population ages 15-19.

Appendix 3: Acronyms



Acronyms are used throughout the document. The first time a term is used, the phrase or name will be written in full, followed by the abbreviation. Some of the frequently used abbreviations in this document include:

ADD – Area Development District	KDPH – Kentucky Department for Public Health
DAIL – Department of Aging and Independent Living	KVH – Kentucky Voices for Health
FHK – Foundation for a Healthy Kentucky	SDOH – Social Determinants of Health
KyBRFS – Kentucky Behavioral Risk Factor Surveillance Program	SHA – State Health Assessment
KHC – Kentuckiana Health Collaborative	KyYRBS – Kentucky Youth Risk Behavior Surveillance Program



Acronyms in this list are specific to newborn disorders to reference with the Newborn Screening Disorder Table. Information on the individual disorders may be found on the [NewSTEPS website](#). NewSTEPS is a national newborn screening resource center designed to provide data, technical assistance and training to newborn screening programs and assist states with quality improvement initiatives.

ARG - Argininemia	MCAD – Medium chain acyl-CoA dehydrogenase deficiency
ASA – Argininosuccinic aciduria	MSUD – Maple syrup urine disease
BKT – Beta-ketothiolase deficiency	3-MCC – 3-methylcrotonyl-CoA carboxylase deficiency
BIOT – Biotinidase deficiency	MMA – Methylmalonic acidemia
CPT-1a – Carnitine palmitoyltransferase 1 deficiency	MPS 1 – Mucopolysaccharidosis type 1
CIT – Citrullinemia	NKHG – Nonketotic hyperglycinemia
CAH – Congenital Adrenal Hyperplasia	OTC – Ornithine transcarbamylase deficiency
CH – Congenital Hypothyroidism	PROP – Propionic acidemia
CF – Cystic Fibrosis	PKU – Phenylketonuria
CUD – Carnitine Uptake Defect	SCID – Severe combined immunodeficiency
GALT – Galactosemia	SCAD – Short-chain-acyl-CoA dehydrogenase
GA-1 – Glutaric acidemia type-1	SMA – Spinal muscular atrophy
HGB – Hemoglobinopathies	TYR-1 – Tyrosinemia type I
HCY – Homocystinuria	TYR-II – Tyrosinemia type II
IVA – Isovaleric Acidemia	VLCAD – Very long-chain acyl-CoA dehydrogenase deficiency
LCHAD – Long-chain-3-hydroxyacyl-CoA dehydrogenase deficiency	X-ALD – X-linked adrenoleukodystrophy

Appendix 4: References

Kentucky Cancer Registry. (2015-2019). Cancer Mortality Rates in Kentucky. Retrieved August 7, 2023, from <http://www.kcr.uky.edu/>.

The Kentucky Cancer Registry (KCR) is the population-based central cancer registry for the commonwealth. It includes reporting of cancer cases from all Kentucky healthcare facilities that either diagnose or treat cancer patients, as well as reciprocal data exchange agreements that allow KCR to obtain information on Kentucky residents with cancer who are seen or treated in contiguous states. KCR links registry data with Kentucky death certificates to identify any cancer diagnoses made upon death that were not previously reported to the registry. Cancer information collected includes primary site and cell type of cancer, date, stage of disease at diagnosis and follow-up information. Patient demographic information is collected, including address, race, sex, Hispanic ethnicity and date of birth. There are two main limitations to the KCR data. The first is the incompleteness of treatment data; patients are often treated with multi-modality therapy in a variety of settings over a long period of time. Due to the confidential nature of the data, it is difficult to capture complete information on all treatments received. The second limitation is timeliness; facilities are allowed six months from the date of initial contact with a patient before the cancer report is required to be sent to KCR. Obtaining out-of-state data, death certificate records, final edits of the data and reliance on other agencies for population estimates contributes to the delay in data availability.

Kentucky Department for Public Health (KDPH) and Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Frankfort, Kentucky: Cabinet for Health and Family Services, Kentucky Department for Public Health, [2016-2021].

The Behavioral Risk Factor Surveillance System (BRFSS) is a cross-sectional telephone survey randomly administered to non-institutionalized adults aged 18 or older living in a household with a telephone. Participation is voluntary, and personal identifying information (such as name or address) is not collected. The KyBRFS sample size in Kentucky is large enough to provide yearly prevalence estimates by Area Development Districts (ADD). There are two main limitations to BRFSS data: non-coverage bias and self-report bias. Non-coverage bias means adults who live in households without a telephone are not included in the sample. Households without a telephone tend to be of lower income and could have socio-economic differences from the survey population. Additionally, the BRFSS only surveys adults living in households. Therefore, individuals living in a group setting (such as a nursing home, the military or prison) are not surveyed. The BRFSS relies on self-reporting. The prevalence estimates are strictly based on each respondent's answers to the questions, and the tendency to report a healthier lifestyle may occur.

Kentucky Department for Public Health (KDPH) and Centers for Disease Control and Prevention (CDC). HIV/AIDS Surveillance. Frankfort, Kentucky: Cabinet for Family and Health Services, Kentucky Department for Public Health, [2016-2021].

The HIV/AIDS registry provides a population data set of reported HIV infections in Kentucky from mandatory lab reporting and medical record abstractions. Data are collected on standardized forms and include demographics, mode of exposure, year of diagnosis, year of report, ADD, county of residence, laboratory and clinical information. Surveillance performance standards and data quality are monitored at least monthly, and lab data are imported into the registry routinely. There are two main limitations to the data reporting delays and undetermined mode of exposure information. HIV data are not always reported in a timely manner, and data provided by the KDPH are not adjusted for reporting delays. Due to these delays, case numbers for most recent years of diagnosis may not be complete and, therefore, not reliable for use in trend analysis. Large percentages of infections without known transmission modes pose a barrier to providing effective responses to the epidemic within the groups in question.

Kentucky Department for Public Health (KDPH). Birth and Death Certificate Files. Frankfort, Kentucky: Cabinet for Health and Family Services [2016-2021]. Birth data for the years 2008-2015 and death data from 2009-2015 are provisional and subject to change.

The Kentucky Birth Surveillance Registry (KBSR) is a state-mandated surveillance system designed to provide information on incidence, prevalence, trends and possible causes of stillbirths, birth defects and disabling conditions. KBSR collects information from vital records, acute care and birthing hospitals, laboratory reporting and voluntary outpatient reporting on all children from birth to five years of age diagnosed with any structural, functional or biochemical abnormality determined genetically or during gestation. Although personal identifying information and diagnostic codes are collected, all data is presented/released in aggregate due to its confidential nature. Data is collected and reviewed at least quarterly. The main limitation of data is small numbers when dealing with individual defects. As a result, county-level data cannot be provided, and the lowest demographic level provided is the Area Development District. Other data limitations include capturing out-of-state births to Kentucky resident mothers and prenatally diagnosed cases of birth defects that are lost prior to 20 weeks gestation.

Kentucky Department for Public Health (KDPH). State Health Assessment. Frankfort, Kentucky: Cabinet for Health and Family Services, Kentucky Department for Public Health, [2017].

Kentucky Department for Public Health Reportable Disease File, Acute Hepatitis C Data. Frankfort, Kentucky. Cabinet for Health and Family Services, Department for Public Health [2016-2021].

Disease reporting is required by healthcare providers, hospitals, clinics and laboratories. Data collection tools include the EPID 200 Reportable Disease form, CDC disease-specific supplemental forms, clinical laboratory reports and the National Electronic Disease Surveillance System (NEDSS). The Reportable Disease Surveillance System (RDSS) includes demographic information, clinical symptoms, risk factors and outbreak associations on each occurrence of more than seventy reportable conditions. Demographic data includes gender, age, race, ethnicity and place of residence. The data provides an estimate of communicable disease incidence and trends across the state. RDSS is a passive system dependent on reporting by healthcare providers and laboratories, and data can be incomplete and delayed. Notification of Hepatitis C shall be considered routine and shall be made within five business days. For a

complete list of reportable diseases, please see:

<https://www.chfs.ky.gov/agencies/dph/dehp/idb/Documents/KYEPID200A.pdf>

Kentucky Department of Education (KDE), Kentucky Department for Public Health (KDPH), and Centers for Disease Control and Prevention (CDC). Kentucky Youth Risk Behavior Surveillance System. Frankfort, Kentucky: Cabinet for Health and Family Services, Kentucky Department of Education. [2017, 2019, and 2021].

The Kentucky Youth Risk Behavior Survey (YRBS) is conducted as part of a national effort by the CDC to monitor students' health-risk behaviors in six priority areas. These six areas include injury and violence, alcohol and drug use, tobacco use, nutrition, physical activity and sexual risk behaviors. These risk behaviors contribute to the leading causes of death, disability, and social problems among youth and adults in the U.S. Kentucky has been administering the YRBS since 1997. The survey is voluntary and is administered to a randomly selected sample of middle and high school students across the state. Limitations include a small sample size and self-reporting from students.

Neonatal Abstinence Syndrome Reporting Registry, 2016-2020; Cabinet for Health and Family Services, Kentucky Department for Public Health, Division of Maternal and Child Health. United States Census Bureau. [2010 and 2020].

In 2013, Kentucky Revised Statute (KRS) 211.676 established NAS as a reportable disease. Mandatory statewide reporting to the Public Health NAS Reporting Registry (from here on, "the NAS Registry") began on July 15, 2014. The NAS Registry collects information from Kentucky hospitals on resident children with NAS and a history of prenatal substance exposure. Case reporting is not tied to the International Classification of Disease codes. KRS 211.678 calls for an annual report of aggregated data. The NAS Registry is a passive surveillance system that poses challenges with data accuracy. Reporting practices of different hospitals or individual hospital employees vary, leading to data inconsistencies that affect the data report. For birth year 2022, 36 Kentucky hospitals reported to the NAS Registry with an average submission time of 61 days after discharge; delayed reporting can negatively affect data quality. The data system does not differentiate the timing and intent of substance use, which affects data on polysubstance use and Medication for Opioid Use Disorder (MOUD). Finally, out-of-state hospitals do not report to the NAS Registry, which could result in underreporting near state borders.

Division of Epidemiology and Health Planning, Kentucky Immunization Branch. [Kentucky Annual School Immunization Survey Report](#), 2022-2023. Frankfort, KY: Kentucky Department for Public Health, June 2023.

According to state regulation 902 KAR 2:055, Section 2, "(1) Kindergartens and public and private elementary and secondary schools shall submit to the local health department in their area immunization results for (a) Kindergarten; (b) Seventh grade; (c) Eleventh grade" on the Commonwealth of Kentucky School/Facility Annual Immunization Survey, and "(2) The annual survey shall include the number of (a) Students in the grade surveyed; (b) Missing immunization records; (c) Religious exemptions declinations; (d) Medical exemptions; (e) Children who have received age-appropriate immunizations; and (f) Vaccine-specific exemptions." The Kentucky Annual School Immunization Survey tools for 2020-2021 were distributed to each local health department (LHD) by KIB in late August 2020 in electronic formats. LHDs distributed the survey

materials to every public and private school with at least one kindergarten class or seventh and eleventh grade class. In 2020, each child was assessed for the presence of an immunization certificate on file, the certificate's expiration date, and the number of doses of each age-appropriate vaccine received. The survey did not collect individual immunization information for each child but instead requested aggregated totals for the whole grade or group for a school. The range of age-specific vaccination rates could vary significantly with the self-report methodology, and caution should be used when interpreting results based on low reporting numbers. In addition, some schools complete the survey within the first few weeks of receiving the package, counting children as noncompliant when doctor's appointments are scheduled for immunizations. Other schools or facilities wait until the final deadline in December, working towards getting all students up-to-date prior to reporting.

Division of Behavioral Health, Department for Behavioral Health, Developmental and Intellectual Disabilities, Kentucky Cabinet for Health and Family Services and Kentucky Incentives for Prevention (KIP) 2021.

The Kentucky Incentives for Prevention (KIP) Survey has been administered bi-annually during even-numbered years in the autumn timeframe. The KIP Survey is Kentucky's largest source of data related to student use of alcohol, tobacco, and other drugs (ATOD), as well as several factors related to potential substance abuse. The survey is offered free of charge to all school districts in the Commonwealth; school district and individual student participation is voluntary. Surveys are administered in paper and web-based formats within a six-week window beginning in October. Results are scanned, tabulated and reported in three to four months following administration.