



Center of Excellence in Rural Health



Kentucky - **D**emographics, **A**nalytics, **T**rends and **A**ccess
(**K-DATA**)

K-DATA: *We define our future, data helps us get there.*

2022

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Introducing K-DATA

Kentucky - Demographics, Analytics, Trends and Access (K-DATA)

K-DATA: *We define our future, data helps us get there.*

The University of Kentucky Center of Excellence in Rural Health recognizes gathering data from multiple sources can be difficult and time-consuming. To alleviate some of the burdens for our partners, we have compiled K-DATA. The document is comprised of various sources to help ease some of the time-consuming data searches. We hope having access to these multiple data sources in a central location will assist community members, grant writers, program developers, education programs, and others who may be interested in learning more about Kentucky through data. The data provides information for program development, goal settings, and evaluation.

Data within this document has been analyzed so common regions of interest can be easily compared (Delta, Appalachian, Rural, Urban, State, and Nationally).

Acknowledgments:

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Geographical Areas

Kentucky, officially the Commonwealth of Kentucky, is the [8th most rural state](#) in the nation. The state is comprised of **120** counties, **34** are classified as urban, and the remaining **86** counties are rural. Federal agencies have numerous definitions as to what constitutes “rural.” For this document, we will use the United States Department of Agriculture’s Rural Urban Commuting Area codes or [RUCA](#). These codes utilize the most recent decennial U.S. Census and same-year American Community Survey data to classify population densities, urbanization, and daily commuting patterns. The Federal Office of Rural Health Policy uses the RUCA methodology in determining rural eligibility for their programs.

The data in this document will focus on the state and the following regions within the state:

The Kentucky **Appalachia** Region

- **54** counties located within the eastern and south-central portion of the state

The Kentucky **Delta** Region

- **21** counties located in the far western part of the state

The Kentucky **Rural** Region

- **86** counties located primarily in the eastern and western parts of the state

The Kentucky **Urban** Region

- **34** counties located primarily in the south-central portion of the state

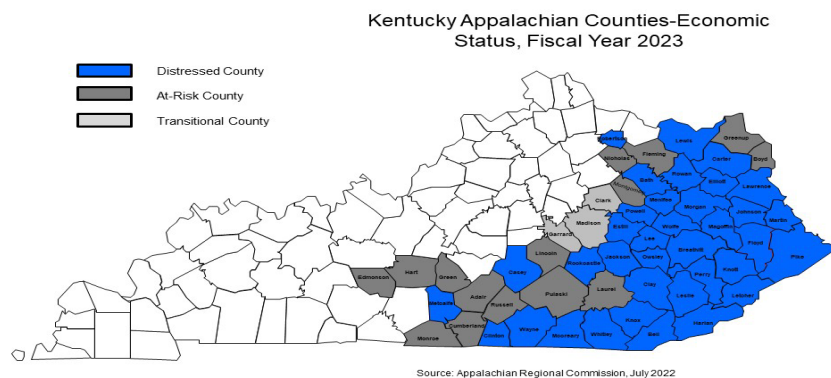
(Note: A county may be included in multiple regions – numbers/percentages will not always total 100)

Stacker, (2019). States with the biggest rural populations. Retrieved March 17, 2022 From <https://stacker.com/business-economy/states-biggest-rural-populations>
Rural-Urban commuting area codes. (2019). Retrieved March 17, 2022 From <https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/>

The Kentucky Appalachian Region

Established in 1965 by Congress, The Appalachian Regional Commission ([ARC](#)) is an economic development partnership agency of the federal government and **13 state governments** focusing on 423 counties across the Appalachian Region. The ARC's mission is to innovate, partner, and invest to build community capacity and strengthen economic growth in Appalachia to help the Region achieve socioeconomic parity with the nation. The Region's 25 million residents live in parts of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia, and all of West Virginia. The **Kentucky Appalachian Region** encompasses **54 rural counties** located within the eastern and south-central portion of the state. Kentucky Appalachia has breathtaking beauty but also has a long history of persistent poverty and subsistence living.

The ARC uses an index-based classification system to compare each county in the nation with national averages on three economic indicators. Based on that comparison, each Appalachian county is classified within one of five economic status designations—distressed, at-risk, transitional, competitive, or attainment. [Distressed](#) counties are those that rank in the **worst 10 percent** of the nation's counties. Currently, **36** Appalachian Kentucky counties qualify for distressed county status on the basis of low per capita income and high rates of poverty and unemployment. **Fifteen** counties are at-risk status while **3** are transitional. Employers in Appalachia Kentucky would need to hire around 30,000 people to move the counties out of economically distressed status.



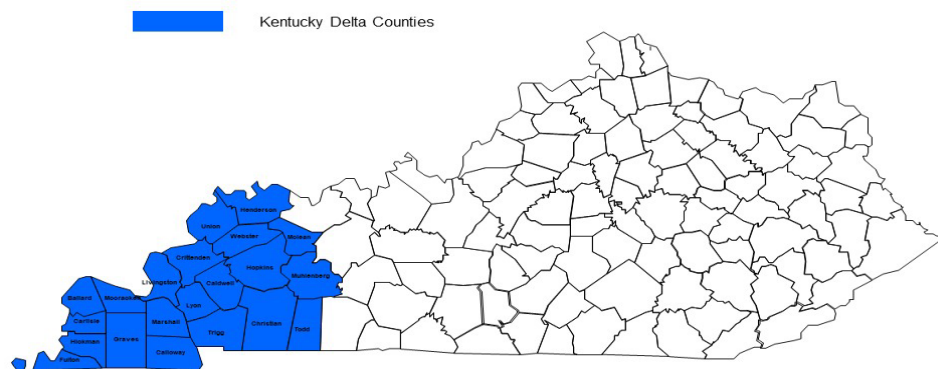
Appalachian Counties: *Adair, Bath, Bell, Boyd, Breathitt, Carter, Casey, Clark, Clay, Clinton, Cumberland, Edmonson, Elliot, Estill, Fleming, Floyd, Garrard, Green, Greenup, Harlan, Hart, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, Lincoln, Madison, Magoffin, Martin, McCreary, Menifee, Metcalfe, Monroe, Montgomery, Morgan, Nicholas, Owsley, Perry, Pike, Powell, Pulaski, Robertson, Rockcastle, Rowan, Russell, Wayne, Whitley, Wolfe.*

The Appalachian Regional Commission. (2021). Retrieved July 13, 2022 From <https://www.arc.gov/about-the-appalachian-regional-commission/>

Classifying economic distress in Appalachian Counties. (2021). Retrieved July 30, 2022 From <https://www.arc.gov/wpcontent/uploads/2020/07/CountyEconomicStatusandDistressAreasFY2021Kentucky.pdf>

The Kentucky Delta Region

Established in 2000 by Congress, the [Delta Regional Authority](#) encompasses **252** counties and parishes within eight states, Kentucky, Alabama, Arkansas, Illinois, Louisiana, Mississippi, Missouri and Tennessee. The Delta Regional Authority makes strategic investments of federal appropriations into the physical and human infrastructure of Delta communities. The Delta Region makes up the most distressed area of the country. The [Kentucky Delta Region](#) encompasses **21 counties** located in the far western part of the state and is bordered by the Mississippi and Ohio Rivers. The Delta region is home to abundant natural resources and environmental assets. The region contains more miles of inland shoreline than any region in the world. Though the region is blessed with both manmade and natural qualities that enhance its uniqueness, Kentucky's Delta counties continue to struggle with economic competitiveness when compared to Kentucky's urban counties.



Source: Appalachian Regional Commission, June 2022

Within the Kentucky Delta Region, eighteen of the 21 counties are identified as rural. All 21 counties meet the criteria of being a [distressed](#) county. To be deemed distressed within the Delta region, counties and parishes must meet the following criteria:

- An unemployment rate of one percent higher (5.2 percent) than the national average (4.2 percent) for the most recent 24-month period; and
- Have a per capita income of 80 percent or less of the national per capita income

Delta Counties: *Ballard, Caldwell, Calloway, Carlisle, Christian, Crittenden, Fulton, Graves, Henderson, Hickman, Hopkins, Livingston, Lyon, Marshall, McCracken, McLean, Muhlenberg, Todd, Trigg, Union, and Webster.*

Delta Regional Authority. (2021). Retrieved May 17, 2022 From <https://dra.gov/>

Delta Regional Authority. (2021). Kentucky. Retrieved May 17, 2022 From <https://dra.gov/about-dra/dra-states/kentucky/>

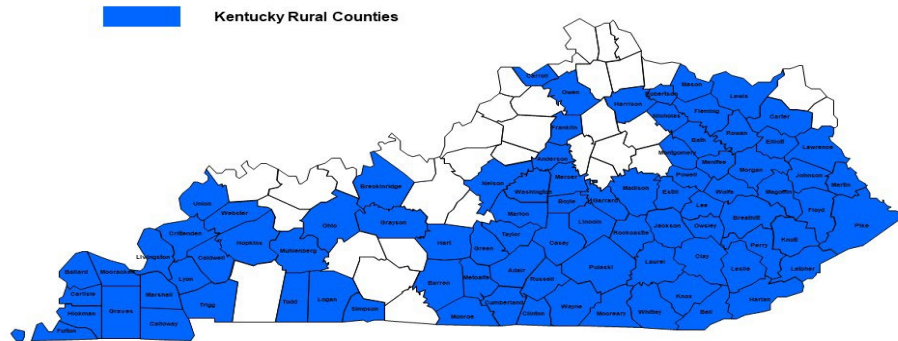
Delta Regional Authority. (2021). Distressed Counties and Parishes. Retrieved March 17, 2022 From <https://dra.gov/funding-programs-states-economic-development/states-economic-development-assistance-program/distressed-counties-and-parishes/>

The Kentucky Rural Region

Rural is an inexact term that can mean different things to different people, organizations, and governments. As previously mentioned, this document uses [Rural Urban Commuting Area Codes \(RUCA\)](#) to determine rural areas of Kentucky. The RUCA classification system uses whole numbers 1-10 and 4 and above are typically considered rural.

Rural communities are known for strong family bonds with a sense of place and connection to the land. The **Kentucky Rural Region**, in general is growing slower, has higher rates of poverty, limited employment opportunities, poor health status and lower rates of educational attainment.

Kentucky's **86 rural** counties are located in the Eastern, South Central and far Western portions of the state. A significant portion of eastern Kentucky (**54** counties) is also part of the Appalachian Region and a significant portion of western Kentucky (**21** counties) are part of the Delta Region.



Source: USDA Economic Research Service, U.S. Department of Agriculture

Rural Counties: *Adair, Anderson, Ballard, Barren, Bath, Bell, Boyle, Breathitt, Breckinridge, Caldwell, Calloway, Carlisle, Carroll, Carter, Casey, Clay, Clinton, Crittenden, Cumberland, Elliott, Estill, Fleming, Floyd, Franklin, Fulton, Garrard, Graves, Grayson, Green, Harlan, Harrison, Hart, Hickman, Hopkins, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Lewis, Lincoln, Livingston, Logan, Lyon, Madison, Magoffin, Marion, Marshall, Martin, Mason, McCracken, McCreary, Menifee, Mercer, Metcalfe, Monroe, Montgomery, Morgan, Muhlenberg, Nelson, Nicholas, Ohio, Owen, Owsley, Perry, Pike, Powell, Pulaski, Robertson, Rockcastle, Rowan, Russell, Simpson, Taylor, Todd, Trigg, Union, Washington, Wayne, Webster, Whitley, and Wolfe.*

Rural-Urban Commuting Area Codes. (2019). Retrieved June 12, 2022 From <https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx>

State Overview

Kentucky, officially the Commonwealth of Kentucky is a state located in the east south-central region of the United States. Kentucky is one of four U.S. states constituted as a commonwealth (the others being Virginia, Pennsylvania, and Massachusetts). Kentucky lies within three major physiographic regions of the United States—the Appalachian Highlands (the Appalachian Plateau), the Interior Lowlands, and the Coastal Plain. Kentucky, also known as the Bluegrass State is the **37th** largest state in the U.S. in terms of total area with [40,408 square miles](#).

Kentucky, which was previously a part of Virginia, has now grown and developed to become the **26th** most populated state in the U.S. with a [population estimate of 4,509,394](#) people.

Kentucky is the [8th most rural](#) state in the nation composed of 120 counties, 34 are classified as urban and the remaining 86 counties are rural based on the U.S. Department of Agriculture's [Rural Urban Commuting Area Codes](#) (RUCA). Most of the rural counties are in Eastern, South Central and far Western Kentucky.

Kentucky has more miles of running water than any other state except Alaska. The numerous rivers and water impoundments provide [1,100 commercially navigable](#) miles (1,770 kilometers). Kentucky has [12.7 million acres](#) of commercial forest land – 50% of the state's land area. The main species of trees are white oak, red oak, walnut, yellow poplar, beech, sugar maple, white ash and hickory. Kentucky ranks third among hardwood producing states.

Typically, we have compared Kentucky's rankings with the rest of the nation and surrounding southern states. However, this report will compare how the rural and urban areas of Kentucky differ from one another (when regional data is available). This report will compare, at a regional level, the differences in demographic, economic, and quality of life conditions for Kentucky's Appalachia, Delta, Rural and Urban areas.

World Atlas. (2022). US States by Size. Retrieved July 12, 2022 From <https://www.worldatlas.com/geography/us-states-by-size.html>

United States Census Bureau. (2022). Annual Estimates of the Resident Population: (V2021) Retrieved July 12, 2022 From <https://www.census.gov/quickfacts/KY>

Stacker.(2019). States with the biggest rural populations. Retrieved July 12, 2022 From <https://stacker.com/stories/2779/states-biggest-rural-populations>

World Population Review (2021). Retrieved July 12, 2022 From <https://worldpopulationreview.com/states>

Rural-Urban commuting area codes. (2019). Retrieved June 12, 2022 From <https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx>

Kentucky Facts (2021). Retrieved July 12, 2022 From <https://www.kentuckytourism.com/travel-tools/about-kentucky/kentucky-facts>

Population

Kentucky: [4,509,394](#)
3.12% growth in population since 2010

Jefferson: 782,969
County with the largest population

Robinson: 2,108
County with the smallest population

Region	Population
Kentucky Urban Population	2,667,645
Kentucky Rural Population	1,851,208
Kentucky Appalachian Population	1,165,510
Kentucky Delta Population	492,116

[U.S. Census Bureau](#)

Kentucky Population Changes

[The U.S. Census Bureau](#) estimates that Kentucky's population of 4,509,394 represents an approximate growth of 3.8% from the 2010 census estimate. Jefferson, the largest county, shows a [growth rate](#) of 3.84%, which is close to the state's overall growth rate.

[U.S. Census Bureau](#) also estimates that more than half of Kentucky's 120 counties have lost population since 2010; 42 of Kentucky's 57 Appalachian counties saw population losses. The Kentucky county with the most significant decline was rural Bell County with a decrease of 16%.

Kentucky's urban counties as a whole averaged a population growth rate of 4 percent which was slightly higher than the state rate (3%) but less than the national (6%). The Kentucky county with the most substantial growth rate was urban Scott County with an increase of 18.51%.

United States Census QuickFacts. (V2021). Kentucky. Retrieved July 13, 2022 From https://www.census.gov/quickfacts/fact/table/KY_US/PST045221

United States Census (2020). State Visualizations of Key Demographic Trends. Retrieved July 13, 2022 From <https://www.census.gov/library/stories/state-by-state.html>

World Population Review (2022). Retrieved August 16, 2022 From [US States - Ranked by Population 2022 \(worldpopulationreview.com\)](#)

Demographics

The majority of [people](#) in Kentucky are between the ages 18 and 64 (56%). Kentucky's 65 and older population is slightly greater in the areas of Appalachia (18.9%) and Delta (20.3%) than that of Kentucky as a whole (17.1%) and the U.S. (16.8%). There are slightly more females (50.5%) as males living in Kentucky, this distribution is relatively similar across all regions.

Kentuckians are predominantly white (87%), followed by Black or African American (8.6%), Hispanic or Latino (4.2%) and Asian (1.7%). The remaining 2% is comprised of American Indian and Alaskan Native, Native Hawaiian or Pacific Islander. A large percentage of the Black or African American alone population in Kentucky resides in the larger urban counties of Jefferson (22.8%) and Fayette (15.9%), while a higher percentage of Hispanic or Latino alone reside in the urban counties of Shelby (9.7%) and Christian (8.5%).

	White Alone	African American Alone	American Indian and Alaska Native Alone	Asian	Native Hawaiian	Two or More Races	Hispanic or Latino
Appalachia	96%	1.9%	0.3%	0.4%	0%	1.3%	1.9%
Rural	94%	3.4%	0.3%	0.5%	0.1%	1.6%	2.4%
Urban	91%	5.2%	0.4%	1.2%	0.1%	2.1%	4.1%
Delta	90%	7%	0.4%	0.6%	0.1%	2.1%	3.2%
Kentucky	87%	8.6%	0.3%	1.7%	0.1%	2.2%	4.2%
United States	76%	13.6%	1.3%	6.1%	0.3%	2.9%	18.9%

[Source: U.S. Census Bureau](#)

Kentucky is one of the **least** diverse states in the country when it comes to race and ethnicity, according to scores based on [U.S. Census](#) 2020 data.

A [diversity index score](#) shows how likely two people selected from an area at random will be from different racial and ethnicity groups, on a scale of 0% to 100%. In the U.S. the diversity index score is **61.1%**, In Kentucky, that likelihood is **32.8%** — the **9th worst** score in the nation.

U.S Census QuickFacts (V2021). Population Estimates. Retrieved From <https://www.census.gov/quickfacts/fact/table/US/PST045221> August 16, 2022.

U.S. Census 2010-2020. Racial and Ethnic Diversity in the United States. Retrieved August 16, 2022 From <https://www.census.gov/library/visualizations/interactive/racial-and-ethnic-diversity-in-the-united-states-2010-and-2020-census.html>

Health Rankings

Each year the United Health Foundation releases [America's Health Rankings](#). Each state is ranked against the other 49 states on core measures indicating overall healthiness and presented in an Annual Report. After not ranking states for two years due to the pandemic, [Kentucky](#) once again is ranked among the **10 unhealthiest states** with a ranking **43rd**, the same slot it had in 2019.

Some of the state's reported **Strengths** from the 2022 report are:

- Low prevalence of excessive drinking
- High prevalence of having a dedicated health care provider
- High percentage of fruit and vegetable consumption

Challenges listed by the report are:

- High premature death rate
- High prevalence of household food insecurity
- High prevalence of cigarette smoking

Highlights:

- Drug deaths increased **104%** from 23.2 to 47.3 deaths per 100,000 population between 2013 and 2020.
- Firearm deaths increased **33%** from 15.3 to 20.3 deaths per 100,000 population between 2019 and 2020.
- Uninsured decreased **60%** from 14.3% to 5.7% of the population between 2013 and 2021.

Kentucky Ranked:

- **39th** in Social and Economic Factors
- **15th** in Physical Environment
- **31st** in Clinical Care
- **46th** in Behaviors
- **45th** in Health Outcomes

Women & Children's Report

United Health Foundation also releases a [Women and Children](#) report which is compiled much the same as the Overall America's Health Rankings. Kentucky, ranked **42nd** according to the 2022 report:

Kentucky's Strengths:

- Low prevalence of illicit drug use among women
- High prevalence of cervical cancer screening
- Low racial disparity between Black and white children in poverty

Kentucky's Challenges:

- High prevalence of multiple chronic conditions among women
- High prevalence of cigarette smoking among women
- High Prevalence of adverse childhood experiences (ACEs)

Highlights

- Firearm deaths **increased 83%** from 3.6 to 6.6 deaths per 100,000 children ages 1-19 between 2013 and 2018-2020
- Frequent Mental Distress **increased 55%** from 17.0% to 26.3% of women ages 18-44 between 2014-2020
- Flu vaccination **increased 27%** from 30.3% to 38.5% of women ages 18-44 between 2017-2018 and 2019-2020
- Neonatal Abstinence Syndrome **decreased 23%** from 23.9 to 18.3 diagnoses per 1,000 birth hospitalizations between 2017 and 2019

Kentucky Ranked (Women)

- **37th** Social & Economic Factors
- **30th** Clinical Care
- **47th** Behaviors
- **47th** Health Outcomes

Kentucky Ranked (Children)

- **35th** Social & Economic Factors
- **22nd** Clinical Care
- **46th** Behaviors
- **45th** Health Outcomes

United Health Foundation. (2022). Americans Health Rankings-Kentucky-Health of Women and Children Report. Retrieved August 16, 2022 From <https://assets.americashealthrankings.org/app/uploads/allstatesums-hwc2022.pdf>

County Health Rankings

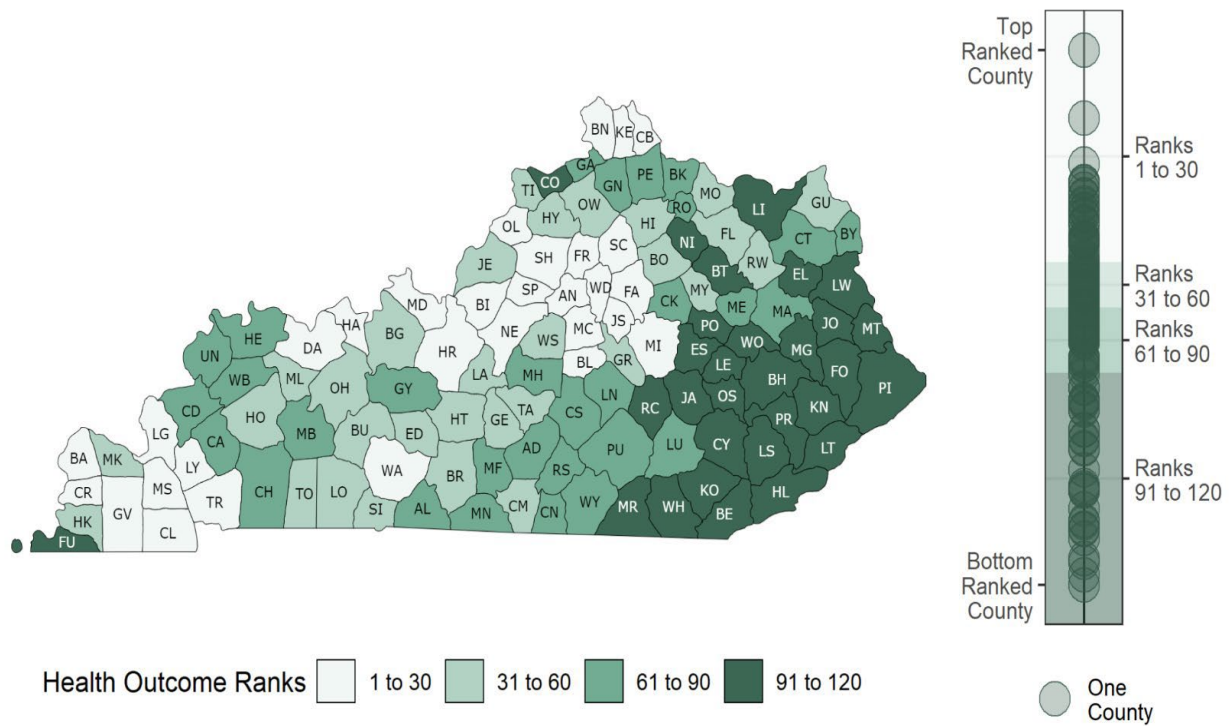
Annually, the Robert Wood Johnson Foundation provides support for a county level report, [County Health Rankings & Roadmaps](#) are released and are based on data collected from the [Behavioral Risk Factor Surveillance System \(BRGSS\)](#). Counties are compared in much the same manner as the states are in America's Health Rankings report. County Health Rankings also releases a state-based report with aggregate data. Below are some of the highlights from the 2022 edition:

- Years of potential life lost were calculated for the state. Potential life lost is anyone who died before age 75 per 100,000 population. According to the report, Kentucky has **10,000** years of potential life lost, whereas the U.S. has 7,300. Astonishingly, the maximum potential life lost for Kentucky is **19,800** years.
- Kentuckians report fair or poor health more frequently than the U.S. (**22%** vs 17% Respectively).
- Kentuckians are more likely to smoke (**25%**) than the U.S. average (16%). Some areas have as many as 36% of the population smoking.
- Obesity is 4% higher in Kentucky (**36%**) than the U.S. (32%).
- Percentage of adults age 18 and over reporting no leisure-time physical activity (age-adjusted) was **32%** in Kentucky vs 26% for the U.S.
- Percentage of population with adequate access to locations for physical activity (age-adjusted) was **66%** in Kentucky vs 80% for the U.S.
- **19%** of Kentucky's children are living in poverty; some areas have 48% of children in poverty.
- Kentucky has **101** deaths due to injury per 100,000 population, higher than the U.S. at 76. There are areas in the state as high as 208 per 100,000 population.

Centers for Disease Control and Prevention-Behavioral Risk Factor Surveillance System (BRFSS) (2022). Retrieved November 4, 2022 From <https://www.cdc.gov/brfss/index.html>
County Health Rankings & Roadmaps, Kentucky State Report (2022). Retrieved October 14, 2022 From <https://www.countyhealthrankings.org/reports/state-reports/2022-kentucky-state-report>

Health Outcomes

[County Health Rankings & Roadmaps](#) measure length and quality of life to understand the health outcomes among counties in Kentucky. Counties are ordered by the health outcome rank, with a top-ranked county (rank = 1) having the best health outcome score. Ranks are good for sparking conversations, but they do not show differences in health within counties or describe the magnitude of difference in community health experienced between ranks. The chart next to the map shows the spread of health outcome scores (ranks) for each county (green circles) in Kentucky. This graphic shows the size of the gaps *between* ranked counties. The background colors correspond to the map legend.



[Source: County Health Rankings](#)

Figure 1. Health outcome ranks displayed using quartiles (map) and underlying health outcome scores (chart)

County Health Rankings & Roadmaps, Kentucky State Report (2022). Retrieved October 14, 2022 From <https://www.countyhealthrankings.org/reports/state-reports/2022-kentucky-state-report>

Social Determinants of Health

Social Determinants of Health (SDOH) are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks. Each of these **five** determinant areas reflects a number of key issues that make up the underlying factors in the arena of SDOH.

Economic Stability

- Poverty
- Employment
- Food Insecurity
- Housing Instability

Education

- Early Childhood Education & Development
- K-12 & High School Graduation
- Enrollment in Higher Education
- Language and Literacy

Social & Community Context

- Civic Participation
- Social Cohesion
- Discrimination
- Incarcerations

Neighborhood & Built Environment

- Access to Foods that Support Healthy Eating Patterns
- Crime and Violence
- Environmental Conditions
- Quality of Housing

Office of Disease Prevention and Health Promotion. (2021). Social Determinants of Health. Retrieved March 12, 2022 From [https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources#:~:text=Healthy%20People%202020%20organizes%20the,5\)%20Social%20and%20Community%20Context](https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health/interventions-resources#:~:text=Healthy%20People%202020%20organizes%20the,5)%20Social%20and%20Community%20Context).

Economic Stability - Poverty

Kentucky is the [5th poorest state](#) in the nation based on median household income according to the U.S. Census Bureau.

The Median household income in Kentucky is \$52,238 compared to \$64,994 nationally	
Kentucky Urban	\$58,965
Kentucky Delta	\$46,922
Kentucky Rural	\$41,705
Kentucky Appalachia	\$38,204

[Source: U.S. Census Bureau](#)

15% of Kentuckians live in poverty compared to 11% of Americans	
Kentucky Urban	13%
Kentucky Delta	16%
Kentucky Rural	20%
Kentucky Appalachia	23%

[Source: U.S. Census Bureau](#)

According to a 2022 [Kentucky Youth Advocates](#) report the commonwealth ranked **38th** for Economic Well-Being for children.

21% of Kentucky Children live in poverty (below 100% of federal poverty level)	
Kentucky Urban	18%
Kentucky Delta	24%
Kentucky Rural	28%
Kentucky Appalachia	32%

[Source: 2022 KY KIDS COUNT Data Book](#)

45% of Kentucky Children live in Low-Income Families (below 200% of the federal poverty level)	
Kentucky Urban	42%
Kentucky Delta	49%
Kentucky Rural	55%
Kentucky Appalachia	65%

[Source: 2022 KY KIDS COUNT Data Book](#)

United States Census Bureau. (2022). Explore Census Data. Retrieved March 17, 2022 From <https://data.census.gov/cedsci/all?q=Kentucky>
 2022 Kentucky KIDS COUNT County Data Book. Kentucky Youth Advocates, Louisville, Kentucky. Retrieved November 4, 2022 From <https://kyyouth.org/kentucky-kids-count/>

Economic Stability - Poverty

Kentucky's [poverty rate](#) of **16.6%** is one of the highest in the country, [ranking 47th](#) or fifth among the states according to the U.S. Census (2021). Rural McCreary county leads the state with a poverty rate of 36, nearly triple the national rate of 11.6%. [Persistent poverty](#) counties are defined as "any county that has had 20 percent or more of its population living in poverty over the past 30 years, as measured by the 1980, 1990, and 2000 decennial censuses".

44 of Kentucky's 120 counties are designated as Persistent Poverty Counties

Region	Persistent Poverty Counties
Kentucky Rural	44 of the 86 counties
Kentucky Appalachia	43 of the 54 counties
Kentucky Delta	1 of the 21 counties
Kentucky Urban	0 of the 34 counties

[Source: USDA Persistent Poverty Counties](#)

Identified as "[Persistent Poverty Counties](#)," these communities are generally rural, isolated geographically, lack resources and economic opportunities, and suffer from decades of disinvestment and double digit poverty rates. Many rural residents face barriers related to access to housing, transportation and food and water that are affordable. The majority of persistent poverty counties are located outside of a Metropolitan Area.

Poverty raises the risk for disease and premature death, according to [Healthy People 2030](#). Poorer mental health outcomes are associated with poverty and it can increase risk for adverse childhood experiences (ACEs) for children. Those who live in persistent poverty areas are more likely to have [greater exposure](#) to cancer-causing and infectious agents, lack adequate housing, experience food scarcity and increased stress, and have poor access to transportation and health care.

U.S. Census Quick Facts (2022). Persons in poverty. Retrieved August 2022 From <https://www.census.gov/quickfacts/fact/table/US/PST045221>
World Population Review (2022). Retrieved September 3, 2022 From <https://worldpopulationreview.com/state-rankings/poverty-rate-by-state>
United States Department of Agriculture-Persistent Poverty Counties (2022). Retrieved November 3, 2022 From <https://www.arcgis.com/apps/View/index.html?appid=0596413bb119432094f3d250f73df851>
Housing Assistance Council, The Persistence of Poverty in Rural America (2020). Retrieved August 4, 2022 From <https://ruralhome.org/persistence-poverty-rural-america/>
Healthy People 2030. SDOH (2022). Retrieved January 9, 2023 From <https://health.gov/healthypeople/search?query=SDOH>
National Cancer Institute-Persistent Poverty and Cancer: Increasing Health Equity across the Cancer Continuum (2021). Retrieved August 4, 2022 From <https://www.cancer.gov/research/annual-plan/scientific-topics/increasing-health-equity>

Economic Stability – Employment

The [Kentucky minimum wage \(\\$7.25\)](#) is the same for all individuals, regardless of how many dependents they may have. Working at minimum wage (\$7.25), each week you would have to work 72 hours to afford a modest 1-bedroom rental home at [Fair Market Rent](#) and 89 work hours per week to afford a 2-bedroom rental home.

The [living wage](#) is the hourly rate that an individual in a household must earn to support his or herself and their family. The assumption is the sole provider is working full-time (2080 hours per year). The table below provides information for individuals, and households of one working adult and zero to three children and two working adults and zero to three children.

1 Adult Working

	0 Children	1 Child	2 Children	3 Children
Living Wage	\$15.46	\$30.32	\$38.31	\$50.67
Poverty Wage	\$6.19	\$8.38	\$10.56	\$12.74
Minimum Wage	\$7.25	\$7.25	\$7.25	\$7.25

[Source: MIT Living Wage Calculation for Kentucky](#)

2 Adults Working

(In the case of households with two working adults, all values are per working adult)

	0 Children	1 Child	2 Children	3 Children
Living Wage	\$12.07	\$16.88	\$21.94	\$25.81
Poverty Wage	\$4.19	\$5.28	\$6.37	\$7.46
Minimum Wage	\$7.25	\$7.25	\$7.25	\$7.25

[Source: MIT Living Wage Calculation for Kentucky](#)

Commonwealth of Kentucky (2022). Workplace Standards Wages and Hours. Retrieved September 3, 2022 From <https://labor.ky.gov/standards/Pages/Wages-and-Hours.aspx>
 Rent Data (2022). Kentucky Fair Market Rent. Retrieved September 2, 2022 From <https://www.rentdata.org/states/kentucky/2022>
 Massachusetts Institute of Technology (2022). Living Wage Calculation for Kentucky. Retrieved September 2, 2022 From <https://livingwage.mit.edu/states/21>

Economic Stability - Employment

[The COVID-19 recession](#) stands in stark contrast with its speed, depth, and reach, in four months from January to April 2020, Kentucky **lost over 325,000 jobs, or 16.7%** of its total nonfarm employment. This is nearly three times the number of jobs lost during the Great Recession, compressed into a fraction of the time. As of June 2022, Kentucky still needs nearly [22,600 additional](#) workers just to reach its pre-pandemic labor force and COVID is still restricting the state's labor market. The [percentage](#) of Kentucky adults working or actively looking for work has been trending downward since 2000 and has remained consistently below national averages and neighboring states both before and after the pandemic.

The [Bureau of Labor Statistics \(BLS\)](#) defines the **labor force** as individuals who are either employed (i.e., those who are working for pay or profit) or unemployed (i.e. those who are jobless but are available to work and have actively looked for work in the past 4 weeks). People who are neither employed nor unemployed are not part of the labor force. A closer comparison of the workforce participation rates of Kentucky and the nation as a whole reveals an alarming disparity:

Kentucky's [workforce participation rate](#) has consistently trailed the national average. During the pandemic, this disparity worsened. In March 2020, the difference between the workforce participation rates of Kentucky and the nation was **3.4** percentage points (**62.6** vs 59.2). In June 2021, the difference had grown to **5.3** percentage points (**61.6** vs 56.3). Kentucky has the **third lowest** workforce participation rate in the nation, just slightly ahead of West Virginia and Mississippi, the two lowest. At current population levels, Kentucky would need to increase its workforce by **180,000** to be in line with the national workforce participation rate.

[Unemployment](#) can have a negative health consequence. Those who are unemployed often report feelings of depression, anxiety, low self-esteem, demoralization, worry and physical pain. Unemployed individuals tend to suffer more from stress-related illnesses such as high blood pressure, stroke and heart disease. [Kentucky's 2022 Unemployment](#) rate was 3.9% slightly above the National rate of 3.5%.

- Kentucky Appalachia Region 5.2%
- Kentucky Delta Region 4.3%
- Kentucky Rural Region 4.7%
- Kentucky Urban Region 3.9%

Kentucky Chamber. Kentucky's Economic Recovery. (2022). Retrieved March 19, 2022 From <https://www.kychamber.com/sites/default/files/pdfs/Kentucky%E2%80%99s%Economic%20Recovery%20A%20Quarterly%20Update%20of%20Workforce%2C%20Employment%2C%20and%20State%20Economic%20Indicators%20%28March%202022%29.pdf>

The Center for Business and Economic Research. (2022) Kentucky Annual Economic Report. Retrieved August 4, 2022 From <https://cber.uky.edu/2022annualreport>

U.S. Bureau of Labor Statistics. (2022) Labor Force Statistics from the Current Population Survey. Retrieved September 14, 2022 From <https://www.bls.gov/cps/definitions.htm#laborforce>

U.S. Department of Health and Human Services (2022). Healthy People 2030. Retrieved September 14, 2022 From <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/employment>

U.S. Bureau of Labor Statistics. (2022) Local Area Unemployment Statistics. Retrieved September 29, 2022 From <https://www.bls.gov/lau/>

Economic Stability - Employment

Kentucky Occupations with Highest Employment

Occupation (SOC Code)	Employed	Average Hourly Wage
Laborers and Freight, Stock, and Material Movers, Hand (53-7062)	65,050	\$15.92
Fast Food and Counter Workers (35-3023)	54,430	\$10.40
Cashiers (41-2011)	48,050	\$11.28
Retail Salespersons (41-2031)	46,080	\$14.08
Registered Nurses (29-1141)	42,940	\$31.75
Customer Service Representatives (43-4051)	40,620	\$16.97
Miscellaneous Assemblers and Fabricators (51-2090)	38,230	\$18.48
Stockers and Order Fillers (53-7065)	35,950	\$13.99
Office Clerks, General (43-9061)	33,660	\$16.48
General and Operations Managers (11-1021)	32,010	\$45.05

[Source: 2022 Statewide Occupational Employment & Wages Report](#)

Fastest-Growing Occupations by Diploma or Non-degree Award

Fastest-Growing Occupations for High School Diploma or Equivalent	Fastest-Growing Occupations for Postsecondary Non-degree Award
Physical Therapist Aides	Medical Assistants
Occupational Therapist Aides	Massage Therapists
Hearing Aid Specialists	Phlebotomist
Ophthalmic Therapy Aides	Ophthalmic Medical Technicians
Veterinary Assistants and Laboratory Animal Caretakers	Medical Records and Health Information
Social and Human Service Assistants	Healthcare Practitioners and Technical Workers, All Others
Loan Interviewers and Clerks	Dental Assistants
Cargo and Freight Agents	Audio and Video Equipment Technicians
Self-Enrichment Education Teachers	Aircraft Mechanics and Service Technicians
Aircraft Cargo Handling Supervisors	Heating, Air Conditioning, and Refrigeration

[Source: 2022 Statewide Occupational Employment & Wages Report](#)

Kentucky Center for Statistics (2022). Statewide Occupational Employment & Wages Report. Retrieved September 4, 2022 From <https://kystats.ky.gov/KYLM/OWSWage>

Economic Stability - Employment

Fastest-Growing Occupations by Degree

Fastest-Growing Occupations for an Associate's Degree	Fastest-Growing Occupations for an Bachelor's Degree
Occupational Therapy Assistants	Software Developers, Applications
Respiratory Therapists	Operations Research Analysts
Veterinary Technologists and Technicians	Software Developers, Systems Software
Diagnostic Medical Sonographers	Substance Abuse and Behavioral Disorder Counselors
Web Developers	Appraisers and Assessors of Real Estate
Computer Network Support Specialists	Market Research Analysts and Marketing Specialists
Environmental Science and Protection	Museum Technicians and Conservators
Technicians including Health	Athletic Trainers
Paralegals and Legal Assistants	Financial Managers
Dental Hygienists	Medical and Health Services Managers

[Source: 2022 Statewide Occupational Employment and Wages Report](#)

Fastest-Growing Occupations for a Master's Degree	Fastest-Growing Occupations for a Professional or Doctoral Degree
Software Developers, Applications	Health Specialties
Operations Research Analysts	Teachers, Post-Secondary
Software Developers, Systems	Physical Therapists
Statisticians	Veterinarians
Physician Assistants	Business Teacher, Post-Secondary
Nurse Practitioners	Physicist
Marriage and Family Therapists	Optometrists
Occupational Therapists	Psychology Teacher, Post-Secondary
Nurse Instructor and Teachers, Post-Secondary	Clinical, Counseling, and School Psychologist
Nurse-Midwives	Dentist, General

[Source: 2022 Statewide Occupational Employment and Wages Report](#)

Economic Stability - Food Insecurity

Food Insecurity is defined as the “limited or uncertain availability of nutritionally adequate and safe foods due to lack of financial resources.” In Kentucky, 575,300 people are facing hunger – and of them 162,100 are children.

Kentucky counties with the highest food insecurity are disproportionately rural with Wolfe County having the highest rate of 26%, Breathitt and Magoffin at 25%, Harlan at 24% and Leslie and Letcher have a rate of 23%. Kentucky counties with the highest rate for Children living in food insecure households are disproportionately rural as well, Harlan County has the highest rate of 35%, Breathitt, Leslie and Magoffin at 33% and Bell, Clay, Knott and Letcher all at 32%. Children are particularly susceptible to the negative impacts of food insecurity because their brains and bodies are still developing. Among children, food insecurity is associated with anemia; asthma; depression and anxiety; cognitive and behavioral problems; and higher risk of being hospitalized.

Food Insecurity Rates	
Kentucky Appalachia	19%
Kentucky Rural	17%
Kentucky Delta	14%
Kentucky Urban	13%
Kentucky	13%
National	12%

[Source: Feeding America](#)

Children Living in Food Insecure Households	
Kentucky Appalachia	24%
Kentucky Rural	23%
Kentucky Delta	20%
Kentucky Urban	18%
Kentucky	16%
National	12%

[Source: 2022 KY KIDS COUNT Data Book](#)

In 2020, 5.2 million **seniors** aged 60+ faced hunger. That's **1 in 15 seniors** or **6.8%** of all seniors. Hunger takes a severe toll on seniors' health and nutrition - putting them at risk for chronic health conditions like depression, asthma, and diabetes. Some seniors are more likely to face hunger due to racial and economic inequality. Seniors are more likely to face hunger if they identify as Black, Latino, or Native America; have lower incomes; or have a disability. Food insecurity has broad effects on health due to the mental and physical stress that it places on the body. A [Centers for Disease Control](#) and Prevention study found that food insecure adults had annual health care expenditures \$1,834 higher than food secure adults, for a cumulative median cost of \$687 million per state.

Feeding America. (2021). Food insecurity in Kentucky. Retrieved March 17, 2022 From <https://map.feedingamerica.org/county/2018/overall/kentucky>
 2022 Kentucky KIDS COUNT County Data Book, Kentucky Youth Advocates, Louisville, KY. Retrieved November 7, 2022 From <https://kyyouth.org/kentucky-kids-count/>
 CDC, (2019) State-Level and County-Level Estimates of Health Care Costs Associated with Food Insecurity. Retrieved November 7, 2022 From https://www.cdc.gov/pcd/issues/2019/18_0549.htm

Economic Stability – Housing Instability

[Across Kentucky](#), there is a shortage of rental homes affordable and available to extremely low-income households (ELI), whose incomes are at or below the poverty guideline or 30% of their area median income. Many of these households are severely cost burdened, spending more than half of their income on housing. Severely cost burdened poor households are more likely than other renters to sacrifice other necessities like healthy food and healthcare to pay the rent, and to experience unstable housing situations like evictions.

Kentucky has the [54th highest rent](#) in the country out of 56 states and territories. There is a **-89,375** shortage of rental homes affordable and available for extremely low-income renters. There are **165,116 or 29%** of Kentucky renter households that are extremely low income. [Fair Market Rent](#) is determined each fiscal year by the [Department of Housing and Urban Development \(HUD\)](#) and is used to set payment standards for federal housing assistance programs in Kentucky. Fair Market Rent is the 40th-percentile of typical rentals in a given region.

In Kentucky, the Fair Market Rent for a two-bedroom apartment is [\\$674.00](#). In order to afford this level of rent and utilities without paying more than 30% of income on housing, a household must earn \$2,804 monthly or \$33,645 annually. Assuming a 40-hour work week, 52 weeks per year, this level of income translates into an hourly Housing Wage of: **\$16.18** per hour. The **state minimum wage (\$7.25)** is the same for all individuals, regardless of how many dependents they may have.

A safe house away from potential hazards can promote well-being. However, living in unsafe or unsuitable housing conditions may contribute to health inequities and be a factor in health problems, such as chronic diseases. Typically, people from low income households are more likely to live in poorer quality housing, which can negatively impact their health. Housing can have a significant impact on a [person's physical and mental health](#). Experts associate poor quality housing with a variety of negative health outcomes.

Kentucky's housing shortage have been worsened by unfortunate recent natural [disasters](#); a tornado (estimated 6,000 homes damaged) in Western Kentucky and historic flooding (estimated 9,000 homes lost) in Eastern Kentucky.

National Low-Income Housing Coalition (2021). Housing Needs By State. Retrieved September 21, 2022 From <https://nlihc.org/housing-needs-by-state/kentucky>

Rent Data (2022). Kentucky Fair Market Rent. Retrieved September 21, 2022 From <https://www.rentdata.org/states/kentucky/2022>

U.S. Department of Housing and Urban Development (2022). State Information. Retrieved September 21, 2022 From <https://search.usa.gov/search?affiliate=housingandurbandevlopment&query=Kentucky>

Medical News Today (2021). How can housing influence health? Retrieved September 21, 2022 From <https://www.medicalnewstoday.com/>

Federal Emergency Management Agency (2022). Kentucky Declared Disasters. Retrieved September 21, 2022 From <https://www.fema.gov/locations/kentucky/#declared-disasters>

Education - Overview

In 2021 the [U.S. News & World Reports](#) ranked Kentucky **36th** among the states for education. Rankings were based 50% on higher education factors such as graduation rates and tuition costs. The remaining 50% is based on Pre-K through 12, using factors such as test scores and high school graduation rates.

[Kentucky](#) has:

- 171 school districts; 120 districts are public 51 are independent
- 95 Career and Technical Schools; 43 are locally operated while 52 are state operated
- 2021 per-pupil spending was \$15,067, below the national average of \$15,621
- average teacher salary is \$55,016, below the national average of \$65,090
- state qualifying data for 2020-2021 reported 60.5% of students K-12 were eligible for free or reduced-priced meals within the public schools
- 27,073 students are homeschooled
- [Over, 21,000 students](#) were identified as homeless in the 2021-22 school year
- Kentucky increased its educational attainment rate from 43.6% in 2015 to 49.4% in 2019, a 5.8 percentage-point gain.

- Student Transitions:
 - College – 18.5%
 - Technical Training – 0.7%
 - Military - 2.1%
 - Working – 28%
 - Work-School Combination – 35.6%
 - Other – 15%

- Kentucky Higher Education Opportunities
 - 8 public universities
 - 18 Association of Independent Kentucky Colleges and Universities (AIKCU) not-for-profit institutions (private liberal arts)
 - 16 community and technical colleges
 - 34 licensed out-of-state institutions
 - 2 dental schools
 - 3 law schools
 - 3 medical schools

Publications. (2021). Education. Retrieved November 4, 2022 From <https://www.usnews.com/news/best-states/rankings/education>

Kentucky Department of Education. (2021). K-12 data. Retrieved March 3, 2022 From <https://education.ky.gov/federal/progs/txc/Documents/2021-2022%20Homeless%20Count%20by%20District%20and%20Grade.pdf>

Education - Early Childhood

The [Kentucky Governor's Task Force](#) on Early Childhood Development and Education recommends that in Kentucky:

School readiness means each child enters school ready to engage in and benefit from early learning experiences that best promote the child's success.

The [2022 KY KIDS COUNT County Data Book](#) reveals that only **44%** of Kentucky children were kindergarten ready:

- **48%** of KY Delta children in public schools were kindergarten ready
- **43%** of KY Urban children in public schools were kindergarten ready
- **42%** of KY Rural children in public schools were kindergarten ready
- **40%** of KY Appalachian children in public schools were kindergarten ready

One of the most widely recognized [risk factors](#) for school readiness is poverty. Fewer than half (48%) of poor children are ready for school at 5 years of age as compared with 75% of children from moderate or high-income households. The first five years of life are critical to a child's lifelong development. Young children's earliest experiences and environments set the state for future development and success in school and life.

There are five pillars to early childhood education in Kentucky:

- The HANDS program – a home visiting program for pregnant women and very young children
- The First Steps program – brings special education therapy services into homes or daycares to provide for children, ages birth to 3 that may exhibit early signs of a development delay
- Head Start – provides services to children ages 3 through kindergarten
- Early Head Start – provides services to children from birth to age 3
- Public pre-kindergarten (preschool) – support services for children ages 3 through 5 with disabilities

Kentucky's preschool education programs are available for all four-year-old children whose family income is no more than 160% of poverty; all three and four-year-old children with developmental delays and disabilities, regardless of income; and other four-year-old children as placements are available based on district decision.

The preschool program is designed to be developmentally appropriate for young children. "[Developmentally appropriate](#)" is defined in law to mean that the program focuses on the child's physical, intellectual, social and emotional development, including interpersonal, intrapersonal, and socialization skills. Kentucky's school districts are only required to offer a half-day preschool program 4 days per week; however, 40% of districts are providing full-day preschool 4 or 5 days a week.

Kentucky Department of Education (2021) School Readiness. Retrieved March 16, 2022 From <https://education.ky.gov/specialed/earlylearning/Pages/default.aspx>
2022 Kentucky KIDS COUNT County Data Book, Kentucky Youth Advocates, Louisville, KY. Retrieved November 19, 2022 From <https://kyyouth.org/kentucky-kids-count/>
Pediatrics August 2019, 144 (2) e2091766: DOI: Retrieved March 16, 2022 From <https://doi.org/10.1542/peds.2019-1766>

Education - K-12 & Graduation Rate

In Kentucky's [latest school report card](#), the majority of schools fell right down in the middle in the yellow category. About 5% of schools in the state fell in the worst ranking, the red category. A little under 8% of schools got the highest, the blue category. *Overall performance rating is one (1) of the five (5) color-coded performance levels that aggregates all available state indicator data for performance status.*

Red (Lowest Performance)–Orange–Yellow–Green– Blue – (Highest Performance)



Educational attainment is lower in the Appalachian region compared to other regions within the state for both high school graduation and Bachelor's degrees. The degree attainment gap is quite alarming between urban and Appalachian counties as well. The urban county of Oldham sits atop the high school scale with a 94.2% and the urban county Fayette leads college attainment with 45% respectively. Appalachian Clay county has the lowest high school graduation rate of 66.6%, and Appalachian Wolfe county has the lowest college degree attainment rate at 6.6%, which is nearly a 30-percentage point gap for both indicators.

Kentucky continues to [lag below](#) the National averages of 89% for high school diplomas and 33% for Bachelor's degrees respectively.

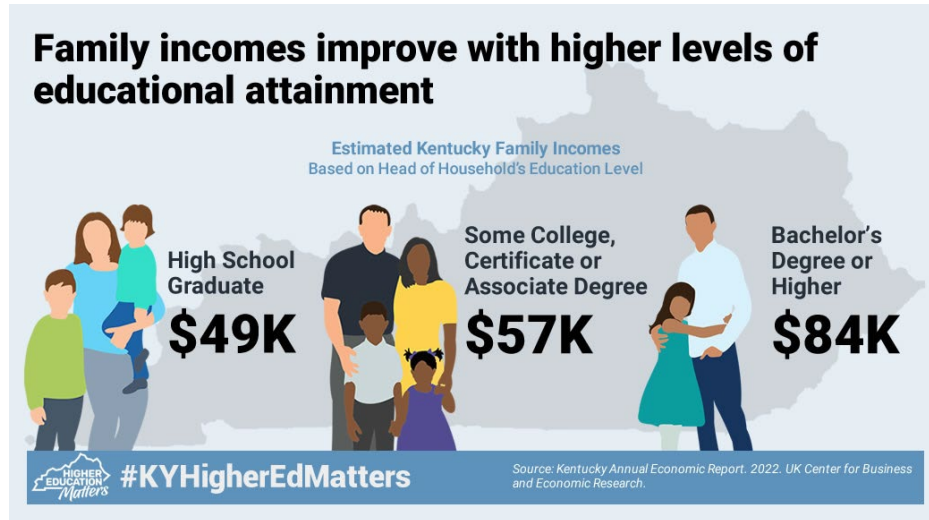
Region	High School graduate or higher, percent of persons age 25 years+, 2016-2020	Bachelor's Degree or higher, percent of persons age 25 years+, 2016-2020
Urban	88%	22%
Delta	87%	17%
Rural	81%	15%
Appalachia	78%	14%
Kentucky	87%	25%
U.S.	89%	33%

[Source: U.S. Census Bureau](#)

Kentucky Department of Education (2022). Kentucky's School Report Card. Retrieved November 4, 2022 From <https://www.kyschoolreportcard.com/home?year=2022>
 U.S. Census Bureau (2022). QuickFacts Kentucky Education. Retrieved October 14, 2022 From <https://census.gov/quickfacts/fact/table/KY,US/PST045221>

Education - Postsecondary

The quickest path to improving economic prospects is through [higher education](#). Whether it is obtaining a higher education credential, a 2-year degree, or a 4-year degree, all the data supports increased economic outcomes for individuals with increased education.



[Source: Kentucky Council on Postsecondary Education](#)

- Over a lifetime, the median lifetime earnings of a Kentucky bachelor's degree graduate are \$1 million more than a high school graduate, while median earnings for associate degree graduates are nearly \$400,000 more
- College graduates are three times less likely to suffer from fair or poor health compared to a high school graduate
- College graduates are twice as likely to volunteer within their communities than high school graduates, often using college to launch their volunteerism
- More than 70% of students donate their time to a good cause while in school

The [American Council on Education](#) defines an education desert as places with either of the following two conditions:

- Zero colleges or universities are located nearby
- One community college is the only public broad-access institution nearby

Many areas in Kentucky are more than a 60-minute drive from a public college. That means large portions of central and eastern Kentucky, including Appalachia, which could be considered education deserts. A college education has been linked to longer life expectancy, improved health outcomes, and higher earnings, and none of these things are particularly high in Kentucky.

CPE. (2022). Higher Education Matters. Retrieved August 3, 2022 From <https://cpe.ky.gov/ourwork/higheredmatters.html>

American Council on Education (2021). Retrieved July 10, 2022 From <https://www.acenet.edu/pages/default.aspx> Council on Post-Secondary Education (2021). Kentucky

Education - Postsecondary

Kentucky Postsecondary Opportunities:

- 8 public universities
- 18 Association of Independent Kentucky Colleges and Universities (AIKCU) not-for-profit institutions (private liberal arts)
- 16 community and technical colleges
- 34 licensed out-of-state institutions
- 2 dental schools
- 3 law schools
- 3 medical schools

Locations



[Source: Kentucky Council on Postsecondary Education](#)

Nationally, total postsecondary enrollment (undergraduate and graduate) decreased about 3% from 2020 to 2021; Kentucky fared [slightly better](#) with only a 2% decline. Recent enrollment declines may be attributed in large part to the COVID-19 pandemic and increased economic instability. Female enrollment represented 59% of total undergraduate enrollment versus 40% for males.

Education – Postsecondary Graduation

Overall, Kentucky public universities increased their six-year graduation rate by 1.8 percentage points:

- from 56.4% in 2019-20 to 58.2% in 2020-21
- The six-year graduation rate for Underrepresented Minoritized (URM) and low-income students rose 4.3 and 1.7 percentage points, respectively.
- KCTCS increased its three-year graduation rate by 4.1 percentage points, from 36.3% in 2019-20 to 40.4% in 2020-21.
- The three-year graduation rate for URM students increased 4.4 percentage points, while the rate for low-income students increased 5.2 percentage points.
- Every institution increased its graduation rate except EKU, which held steady at 52.3%.
- Increases ranged from a high of 7.9 percentage points at KSU to a low of 1.2 percentage points at UofL.

Kentucky Public universities increased graduate degree production by:

- 7.1%, from 7,459 in 2019-20 to 7,989 in 2020- 21
- Graduate degrees awarded to URM and low-income students also increased by 16.8% and 11.1%, respectively
- Three of the eight public universities awarded more graduate degrees in 2020-21 than in the previous year: NKU (up 69.9%), Murray State (up 24.6%), and UofL (up 6.8%)
- Five public universities experienced declines in graduate degree production, ranging from a 2.8% decrease at UK to a 19.1 decrease at Morehead State University

Social and Community Context

Civic Participation

Civic engagement, including voting, volunteering, and participating in civic organizations, is associated with better psychological, physical and behavioral health and well-being. In addition, civic engagement is increasingly viewed as a potentially important driver for raising awareness of and addressing unhealthy conditions in communities. (e.g., in Robert Wood Johnson Foundation’s [Culture of Health](#) action framework)

Health Benefits

- Civic group participation decreases social isolation
- Voting is associated with better self-reported health
- Volunteering is associated with better sense of well-being and emotional health
- Older adult volunteers experience reduced cognitive decline
- Civically engaged adults report more physical activity

Civic participation is essential because it allows citizens to influence policy, local values, and local government priorities. This, in turn, leads to a higher level of trust, stronger, happier communities, and creates agency among residents who are often overlooked and underheard.

Region	Residents 18 and older voting in 2020 election
Kentucky Urban	62%
Kentucky Delta	62%
Kentucky Rural	60%
Kentucky Appalachia	59%
Kentucky	64%
National	67%

[Source: U.S. Census Bureau](#)

The [Kentucky YMCA Youth Association](#), works with children to help share the message “that civic life does not start or stop at the voting booth or with logging service hours; civic life is everything we do to engage as a citizen and member of our community”. Citizenship is a skill that must be learned and honed – the earlier, the better. Unfortunately, most YMCAs in Kentucky are located in the Urban and Delta regions.

U.S. Census Bureau. (2022). QuickFacts. Retrieved July 9th, 2022 From <https://www.census.gov/quickfacts/US>

Robert Wood Johnson Foundation (2021). Building a Culture of Health. Retrieved July 20, 2022 From <https://www.rwjf.org/en/building-a-culture-of-health.html>

County Health Rankings & Roadmaps (2021). Building a Culture of Health, County by County. Retrieved July 8, 2022 From <https://countyhealthrankings.org>

Kentucky YMCA Youth Association (2022). Retrieved July 8, 2022 From <https://www.kyymca.org/>

Social and Community Context

Social Cohesion

[Social Cohesion](#) refers to the extent of connectedness and solidarity among groups in society. One could say it's the glue that holds a community together. It identifies two main dimensions: the sense of belonging and the relationships among members within the community itself. Social support and social cohesion are strongly correlated with physical activity participation on an individual level.

The [Kentucky 2016 Civic Health Index report](#) revealed that the Commonwealth improved in national rankings in social connectedness, community engagement and voter registration since the release of the first report. Kentuckians are volunteering, making charitable contributions, and registering to vote. However, troubling findings revealed that fewer than half of Kentuckians have confidence in media, a decline of more than 10 percent in three years, and fewer Kentuckians are trusting of their neighbors.

Data from a 2022 [Gallop Poll](#) suggest that just 7% of Americans have "a great deal" of trust and confidence in the media, and 27% have "a fair amount." Meanwhile, 28% of U.S. adults say they do not have very much confidence and 38% have none at all in newspapers, TV and radio. Notably, this is the first time that the percentage of Americans with no trust at all in the media is higher than the percentage with a great deal or a fair amount combined.

Americans have long been much more likely to trust information from local and national news organizations than information on social media sites. This remains the case today, except among the youngest adults. Adults under 30 are now almost as likely to trust information from social media sites as they are to trust information from national news outlets. In a recent [Pew Research Center](#) survey, half of 18- to 29-year-olds in the United States say they have some or a lot of trust in the information they get from social media sites, just under the 56% who say the same about information from national news organizations, but somewhat below the 62% who say so about information from local news organizations.

Healthy People (2021). Social Cohesion. Retrieved March 17, 2022 From <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/social-cohesion>

Publication. (2016). Kentucky Civic Health Index. Retrieved July 19, 2022 From https://www.ncoc.org/wp-content/uploads/2017/01/KYCHI_2016_Final.pdf

Publication. (2022). Americans' Trust In Media Remains Near Record Low. Retrieved November 6, 2022 From <https://news.gallup.com/poll/403166/americans-trust-media-remains-near-record-low.aspx>

Publication. (2021) Pew Research Center. U.S. adults under 30 now trust information from social media almost as much as from national news outlets. Retrieved November 6, 2022 From <https://www.pewresearch.org/fact-tank/2022/10/27/u-s-adults-under-30-now-trust-information-from-social-media-almost-as-much-as-from-national-news-outlets/>

Social and Community Context

Discrimination

Discrimination is a socially structured action that is unfair or unjustified and harms individuals and groups. Discrimination can be attributed to social interactions that occur to protect more powerful and privileged groups at the detriment of other groups.

Discrimination is itself a social determinant of health, as a type of stressor experienced by communities of color, sexual and gender minorities, women, and many others in the United States. It is also a determinant of access to other important social determinants of health. The direct and indirect health impacts of discrimination are harmful not just to the targets but to their families, loved ones, and communities. Thus, the impact of discrimination on health is far reaching, contributing to the multitude of health inequities many marginalized communities face.

Discrimination is a fairly common experience; 31% of U.S. adults report at least 1 major discriminatory occurrence in their lifetime, and 63% report experiencing discrimination every day.

The US News ranks Kentucky the **3rd** best state for Equality

- **2nd** for Income Gap by Race
- **4th** for Education Gap by Race
- **21st** for Employment Gap by Race
- **25th** for Disability Employment Gap
- **26th** for Labor Force Participation Gap by Gender
- **32nd** for Income Gap by Gender

Healthy People 2030. Discrimination. (2022). Retrieved November 6, 2022 From <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/discrimination>
Publication. The US News. Equality. (2022). Retrieved November 6, 2022 From <https://www.usnews.com/news/best-states/rankings/opportunity/equality>

Social and Community Context

Incarceration

When compared to other nations, the numbers are quite staggering. On a global scale, the [incarceration rates](#) in the United States are far greater than in other countries. To put it into perspective, the population of the United States consists of only 5% of the world's population; however, 20% of the world's prisoners are located in the United States. Data from 2021 shows that 664 per 100,000 people are incarcerated in the United States, however, Kentucky has an **incarceration rate of 930 per 100,000** which far **exceeds** the national average.

State and federal prisons typically house people sentenced to more than 1 year of incarceration. Local jails hold people sentenced to less than 1 year; people who violate parole or probation; and those awaiting trial, sentencing, or transfer to prison.

Kentucky has:

- **5** Federal Prisons
- **14** State Prisons
- **84** local jails

Kentucky has some of the highest incarceration rates in the country. While COVID-19-related efforts alleviated some jail and prison overcrowding, new analysis from the [Kentucky Center for Economic Policy](#), a progressive think tank, shows carceral institutions are over capacity again — with **9,835** people in state prisons and **21,831** in Kentucky jails.

Currently [41% of Kentuckians](#) leaving incarceration end up returning after 2 years. Higher education has been shown to reduce recidivism but need-based financial aid is important for increasing college degree and credential attainment among low-income Kentuckians.

[Kentucky Youth Advocates 2022 Data Book](#) reports that **13.7%** of Kentucky Youth were incarcerated in the juvenile justice system (rate per 1,000 children ages 10-17 – 2019-2021).

2.5% of the children that live in **rural areas** are most likely to have a complaint filed against them versus **1.7%** of children who live in urban areas.

World Population Review. (2022). Incarceration rates by state. Retrieved August 3, 2022 From <https://worldpopulationreview.com/state-rankings/incarceration-rates-by-state>

Kentucky Center for Economic Policy. (2022). Kentucky Prison Overcrowding. Retrieved August 3, 2022 From <https://kypolicy.org>

Publication. (2019). HB463 Annual Report 2019. Retrieved August 4, 2022 From <https://corrections.ky.gov/About/researchandstats/Documents/Annual%20Reports/HB%20463%20Report%202019.pdf>

2022 Kentucky KIDS COUNT County Data Book. Kentucky Youth Advocates. Louisville, KY. Retrieved November 18, 2022 From <https://kyyouth.org/kentucky-kids-count/>

Health Care Workforce

The COVID-19 pandemic has taken a heavy toll on health care teams who have been on the front lines of the pandemic with many suffering from stress, trauma, burnout and increased behavioral health challenges. A [2021 Kaiser Family Foundation -Washington Post](#) survey found that nearly 30% of health care workers are considering leaving their profession altogether, and nearly 60% reported impacts to their mental health stemming from their work during the COVID-19 pandemic.

However, the challenge of sustaining the health care workforce was problematic before the COVID-19 pandemic. According to the [American Hospital Association](#), America will face a shortage of up to **124,000 physicians by 2033**, and will need to hire at least **200,000 nurses per year** to meet increased demand and to replace retiring nurses. There also are critical shortages of allied health and behavioral health professionals, especially in historically marginalized rural and urban communities.

Shortages in healthcare workers in Kentucky is not a new challenge either but has certainly worsened in the past three years. Burnout and stress have only exacerbated this issue. A [2022 Kentucky Physician Report](#) from the UK Center for Excellence in Rural Health, states that Kentucky currently ranks 40th in the U.S. in Primary Care Physicians per 100,000 people. Roughly 75% of Kentucky physicians practice in Urban counties, 25% in Rural counties, 17% in Appalachia counties and 4% in Delta counties.

The [Kentucky Hospital Association](#) (KHA) tells us that concerns about healthcare workforce supply and preparing the next generation of the healthcare workforce have been building for several years for a variety of reasons. The retirement and aging of an entire generation are front and center of the healthcare workforce shortage, particularly impacting rural communities. Like in other sectors, the healthcare workforce is **rapidly aging**: over a quarter of all physicians are over 60 years old, the average age of a nurse is over 50. Nearly 20% of the healthcare workforce have left positions since the beginning of the pandemic, up to 47% of the healthcare workforce plan to leave their positions by 2025.

The Kentucky Hospital Association [2021 KHA Workforce Survey Report](#) revealed that Kentucky hospitals reported 13,423 full-time equivalent vacancies across thirteen professional groups, a statewide hospital workforce vacancy rate of 17.1 percent. Hospitals reported 5,060 Registered Nurse and 5,060 Licensed Practical Nurse vacancies, for a combined vacancy rate of 22.1 percent. There was also an increase in the vacancy rates for Respiratory Therapists (17.7%), and laboratory staff (14.2%).

KFF/The Washington Post Frontline Health Care Workers Survey. (2021) Retrieved September 3, 2022 From <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-washington-post-health-care-workers/>
American Hospital Association. (2020). Retrieved September 3, 2022 From <https://www.aha.org/fact-sheets/2021-05-26-fact-sheet-strengthening-health-care-workforce>
Kentucky Hospital Association. (2022) Workforce Survey Report. Retrieved September 4, 2022 From <https://www.kyha.com/assets/docs/DataDocs/KHA2022WorkforceSurveyReportPublished2022.pdf>
Thompson, et al. (2022) Kentucky Physician Report. Retrieved September 4, 2022 From <https://medicine.uky.edu/sites/default/files/inline-files/2023%20KBML%20Update%20%282022%20Data%29.pdf>

Health Professional Shortage Area (HPSA) Designation

HPSA designations are used to identify areas and population groups within the United States that are experiencing a shortage of health professionals. There are three categories of HPSA designation based on the health discipline that is experiencing a shortage: Primary Medical, Dental and Mental Health. The primary factor used to determine a HPSA designation is the number of health professionals relative to the population with consideration of high need. Federal regulations stipulate that, in order to be considered as having a shortage of providers, an area must have a population-to-provider ratio of a certain threshold. Health Professional Shortage Areas (HPSAs) can be geographic areas, population groups, or facilities within the United States that are experiencing a shortage of health care professionals.

Geographic HPSAs - have a shortage of services for the entire population within an established geographic area.

Population HPSAs - have a shortage of services for a specific population subset within an established geographic area. Frequently Designated Population HPSAs include:

- Medicaid eligible
- Low income
- Migrant farmworker
- Native American/Alaskan Native
- People experiencing homelessness

Facility HPSAs include these categories:

- Other Facility (OFAC) - Public or non-profit private medical facilities serving a population or geographic area designated as a HPSA with a shortage of health providers.
- Correctional Facility - Medium to maximum-security federal and state correctional institutions and youth detention facilities with a shortage of health providers.
- State Mental Hospitals - State or county hospitals with a shortage of psychiatric professionals (mental health designations only).

Automatic Facility HPSAs (Auto-HPSAs) - Facilities that HRSA automatically designates as HPSAs

based on statute or through regulation. These include:

- Federally Qualified Health Centers (FQHCs)
- FQHC Look-A-Likes (LALs)
- Indian Health Facilities

IHS and Tribal Hospitals, Dual-funded Community Health Centers/Tribal Clinics and CMS-Certified Rural Health Clinics (RHCs) that meet National Health Service Corps (NHSC) site requirements

HPSA - Primary Care

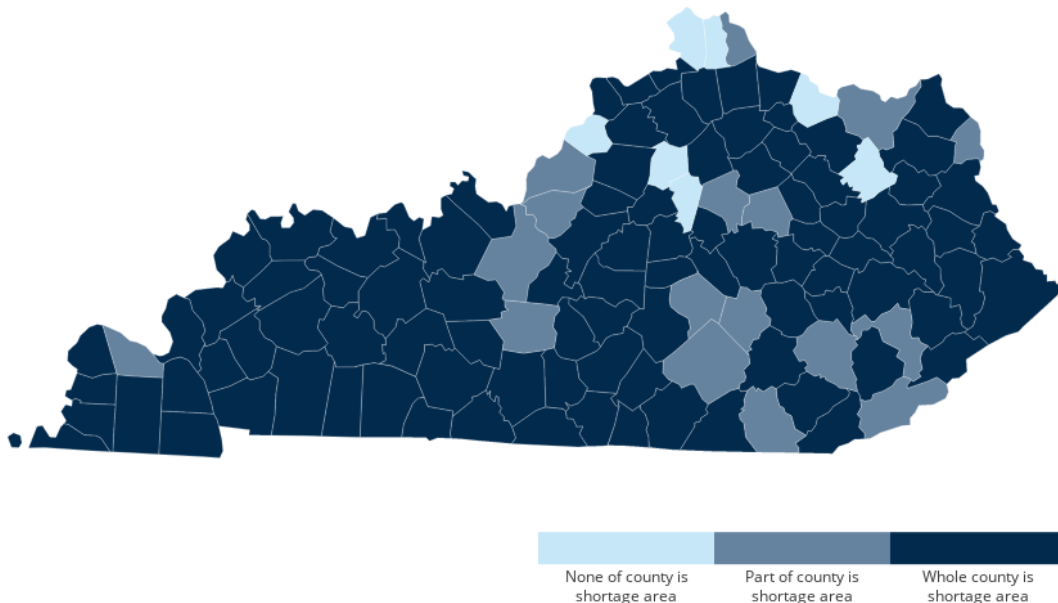
Federal regulations stipulate that, in order to be considered as having a shortage of providers, a designation must have a population-to-provider ratio that meets or exceeds a certain threshold. For primary care geographic designations, the population to provider ratio must be at least 3,500 to 1. For primary care population designations or geographic designations in areas with unusually high needs, the threshold is 3,000 to 1. For correctional facilities, the threshold is 1,000:1 and considers the average length of stay, and whether or not intake examinations are routinely performed.

Primary Care HPSAs can receive a score between 0-25. This is a broad overview of the four components used in Primary Care HPSA scoring:

- Population-to-Provider ratio (10-points max)
- Percent of Population below 100% Federal Poverty Level (5-points max)
- Infant Health Index (Based on IMR or LBW Rate (5-points max)
- Travel Time to Nearest Source of Care (5-points max)

Kentucky has **244** Federal Designated **Primary Care Shortage Designations** and would need **298** additional practitioners to remove all designations.

Health Professional Shortage Areas: Primary Care, by County, 2022 - Kentucky



Source: [data.HRSA.gov](https://data.hrsa.gov), November 2022.

HRSA. (2020). Scoring Shortage Designations. Retrieved August 3, 2022 From <https://bhw.hrsa.gov/workforce-shortage-areas/shortage-designation/scoring>

Kaiser Family Foundation. (2022). Primary Care Health Professional Shortage Areas. Retrieved August 3, 2022 From <https://www.kff.org/other/state-indicator/primary-care-health-professional-shortage-areas-hpsas/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

Rural Health Information Hub. Map. (2022). Retrieved July 29, 2022 From <https://www.ruralhealthinfo.org/charts/9?state=KY>

HPSA - Dental

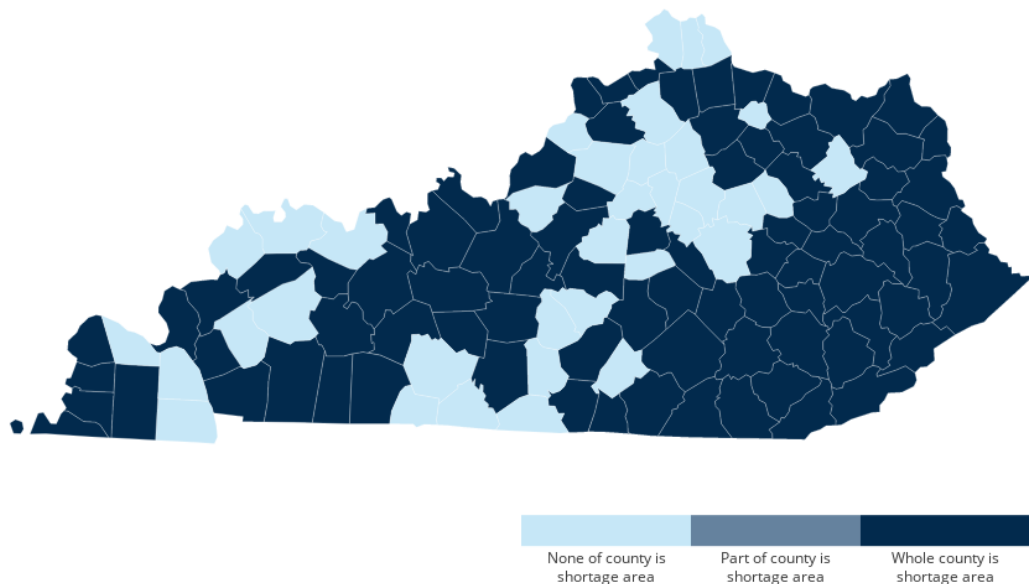
Federal regulations stipulate that, in order to be considered as having a shortage of providers, a designation must have a population-to-provider ratio that meets or exceeds a certain threshold. For dental geographic designations, the ratio must be at least 5,000 to 1. For dental population designations or geographic designations in areas with unusually high needs, the threshold is 4,000 to 1. For correctional facilities, the threshold is 1,500:1 and considers the average length of stay, and whether or not intake examinations are routinely performed.

Dental Care HPSAs can receive a score between **0-26**. This is broad overview of the four components used in [Dental Care HPSA scoring](#):

- Population-to-Provider ratio (10-points max)
- Percent of Population below 100% Federal Poverty Level (10-points max)
- Water Fluoridation Status (1-point max)
- Travel time to Nearest Source of Care (5-points max)

Kentucky has **182** Federal Designated **Dental Care Shortage Designations** and would need **199** additional dentists to remove all designations.

Health Professional Shortage Areas: Dental Care, by County, 2022 - Kentucky



Source: data.HRSA.gov, November 2022.

HRSA. (2020). Scoring Shortage Designations. Retrieved August 3, 2022 From <https://bhw.hrsa.gov/workforce-shortage-areas/shortage-designation/scoring>

Kaiser Family Foundation. (2022). Dental Care Health Professional Shortage Areas. Retrieved August 3, 2022 From <https://www.kff.org/other/state-indicator/dental-care-health-professional-shortage-areas-hpsas/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

Rural Health Information Hub. Map. (2022). Retrieved July 29, 2022 From <https://www.ruralhealthinfo.org/charts/9?state=KY>

HPSA - Mental Health

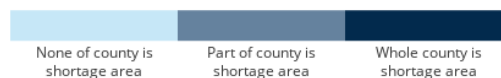
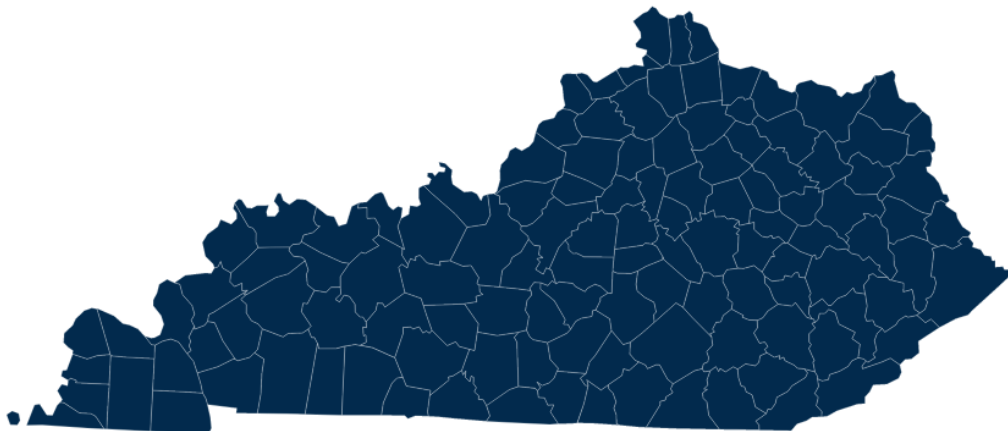
Federal regulations stipulate that, in order to be considered as having a shortage of providers, a designation must have a population-to-provider ratio that meets or exceeds a certain threshold. Mental health designations may qualify for designation based on the population to psychiatrist ratio, the population to core mental health provider (psychiatrists, clinical psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists) ratio, or the population to both psychiatrist and core mental health provider ratios.

Mental Health Care HPSAs can receive a score between 0-25. This is broad overview of the four components used in [Mental Health Scoring](#):

- Population-to-Provider ratio (7 points max)
- Percent of Population below 100% Federal Poverty Level (5-points max)
- Elderly Ration (3-points max)
- Youth Ratio (3-points max)
- Alcohol Abuse Prevalence (1-point max)
- Substance Abuse Prevalence (1-point max)
- Travel time to Nearest Source of Care (5-points max)

Kentucky has **131** Federal Designated Mental Health Shortage Designations and would need **215** additional practitioners to remove all designations.

Health Professional Shortage Areas: Mental Health, by County, 2022 - Kentucky



Source: data.HRSA.gov, November 2022.

HRSA. (2020). Scoring Shortage Designations. Retrieved August 3, 2022 From <https://bhw.hrsa.gov/workforce-shortage-areas/shortage-designation/scoring>
Kaiser Family Foundation. (2022). Mental Health Care Health Professional Shortage Areas. Retrieved August 3, 2022 From <https://www.kff.org/other/state-indicator/mental-health-care-health-professional-shortageareas/locations/?currentTimeframe=0&sortModel=%7B%22collId%22:%22Location%22,%22sort%22:%22asc%22%7D>
Rural Health Information Hub. Map. (2022). Retrieved July 29, 2022 From <https://www.ruralhealthinfo.org/charts/9?state=KY>

HPSA - Medically Underserved

Medically Underserved Areas (MUAs) and Medically Underserved Populations (MUPs) identify geographic areas and populations with a lack of access to primary care services.

Medically Underserved Areas have a shortage of primary care health services for residents within a geographic area such as:

- a whole county
- a group of neighboring counties
- a group of census tracts; or
- a group of county or civil divisions

Medically Underserved Populations

MUPs are specific sub-groups of people living in a defined geographic area with a shortage of primary care health services.

Examples

- Homeless
- Low-income
- Medicaid-eligible
- Native American
- Migrant farmworkers

Index of Medical Underservice (IMU) Score must be less than **62** for a designation. This is broad overview of the components used in Medical Underservice scoring.

- Provider per 1,000 Population ratio (28.7-points max)
- Percent of Population below 100% Federal Poverty Level (25.1-points max)
- Percent Population age 65 and over (20.2-points max)
- Infant Mortality Rate (26-points max)

Exceptional MUP Designations – Governors may designate population groups within a geographic area of their state as shortage areas using a state-created and HRSA-certified Shortage Area Plan.

Rural Access to Care

Having a primary care provider (PCP) is important for maintaining health, preventing and managing serious diseases. PCPs can develop long-term relationships with patients and coordinate care across health care providers. Ideally, residents should be able to conveniently and confidently access services such as primary care, dental care, behavioral health, emergency care, and public health services.

In Kentucky, there has long been a gap in health care statistics between urban vs. rural counties. Although this gap can be traced to several different causes, one important factor is the lack of access to quality medical care.

[Access to health care services](#) means "the timely use of personal health services to achieve the best health outcomes." It requires **3** distinct steps:

1. Gaining entry into the health care system (usually through insurance coverage)

Kentucky had a 2021 uninsured rate of [7%](#) for persons under the age of 65, compared to the US rate of 10%.

- Kentucky Appalachia 8%
- Kentucky Delta 8%
- Kentucky Rural 8%
- Kentucky Urban 7%

Kentucky's Marketplace Average Benchmark Premiums for 2023 is estimated to be \$422 compared to the U.S. estimate of \$456.

2. Accessing a location where needed health care services are provided (geographic availability)

Burdensome travel arrangements for medical or dental care have been identified as barriers to healthcare access, particularly in rural areas. Higher travel burden has been associated with delayed or foregone medical care and missed appointments, which leads to reduced preventive care, greater disease burden, poorer treatment outcomes, and reduced quality of life.

Healthy People 2030. (2022). Access to Primary Care. Retrieved September 19, 2022 From <https://health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/access-primary-care>

U.S. Census Bureau. (2022). QuickFacts. Retrieved September 19, 2022 From <https://www.census.gov/quickfacts/US>

Kaiser Family Foundation. (2022). State Health Facts. Health Coverage & Uninsured Retrieved August 3, 2022 From <https://www.kff.org/state-category/health-coverage-uninsured/>

Primary Care

- On average, [U.S. Residents traveled](#) 9.9 miles one-way for medical/dental care in 2017. Rural residents traveled more than twice the distance for care than urban residents (urban, 8.10 miles; rural, 17.8 miles)
- On average, U.S. residents spent 27.1 minutes in transit or travel for medical/dental care in 2017. Rural residents spent more time in travel for care than urban residents (urban, 25.5 minutes; rural 34.2 minutes)
- Rural trips made between midnight and 6:59 a.m. were 22 miles farther and 24 minutes longer than urban night trips.

A Kentucky Department for Public Health, Kentucky Primary Care Office [Needs Assessment Report](#) conducted in 2021, revealed **transportation** was cited as the greatest health access issue by survey respondents

3. Trust in a Health Care Provider (personal relationship)

The issue of trust has gained increasing attention in the past couple of years, probable due in part to the COVID-19 pandemic. To be effective, it is crucial that relationships between patients, clinicians, and health care organizations be grounded in trust, as trust impacts key health behaviors and outcomes, such as vaccine acceptance, treatment adherence, and patient satisfaction.

A recent survey from [National Opinion Research Center](#) National Opinion Research Center (NORC) revealed:

- Trust in clinicians is greater than in the health care system as a whole
- Physician trust decreased during the COVID-19 pandemic; rebuilding trust is needed
- Physicians understand the importance of building trust with patients, but they do not always perform trust-building behaviors
- Almost all physicians (98%) say that spending an appropriate amount of time with patients is important
- Only 77% of patients think their doctor spends an appropriate amount of time with them

Rural Health Research Gateway, (2021) Research Alert. Retrieved September 16, 2022 From <https://www.ruralhealthresearch.org/alerts/423>

Kentucky Department for Public Health, Kentucky Primary Care Office. (2021). Needs Assessment Report. Retrieved August 9, 2022 From

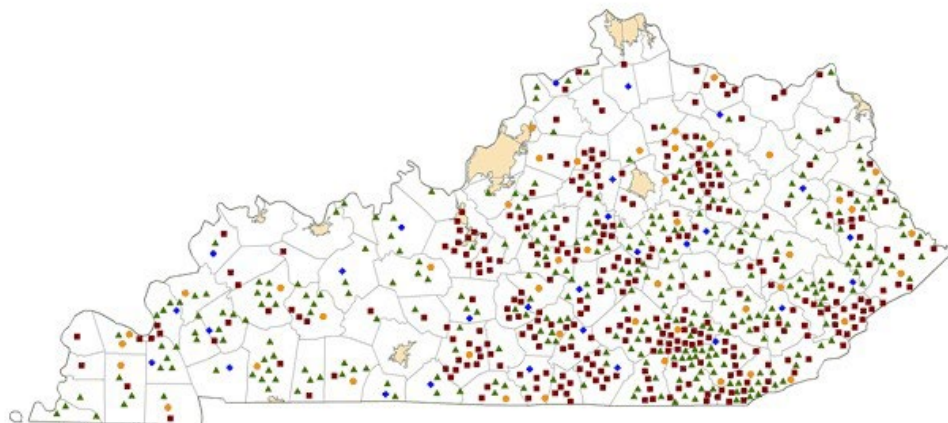
<https://www.chfs.ky.gov/agencies/dph/dpqi/hcab/hcabdocs/pconeeds.docx>

National Opinion Research Center. (2021). Surveys of Trust in the U.S. Health Care System. Retrieved August 9, 2022 From

https://www.norc.org/PDFs/ABIM%20Foundation/20210520_NORC_ABIM_Foundation_Trust%20in%20Healthcare_Part%201.pdf

Facilities

Kentucky Rural Healthcare Facilities



*Sites located outside of Urbanized Areas according to [data.HRSA.gov](https://data.hrsa.gov). July 2022.

Critical Access Hospitals

[Critical Access Hospital](#) (CAH) is a designation given to eligible rural hospitals by the Centers for Medicare and Medicaid Services (CMS). Congress created the CAH designation through the Balanced Budget Act of 1997 (Public Law 105-33) in response to a string of rural hospital closures during the 1980s and early 1990s. Since its creation, Congress has amended the CAH designation and related program requirements several times through additional legislation. The CAH designation is designed to reduce the financial vulnerability of rural hospitals and improve access to healthcare by keeping essential services in rural communities. To accomplish this goal, CAHs receive certain benefits, such as cost based reimbursement for Medicare services.

Rural Health Information Hub. (2022). Rural Healthcare Facilities. Retrieved September 4, 2022 From <https://www.ruralhealthinfo.org/states/Kentucky>
Flex Monitoring Team. (2022). Critical Access Hospitals. Retrieved September 4, 2022 From <https://www.flexmonitoring.org/the-flex-program>

Facilities

The Rural Health Clinic Service Act of 1977 addressed an inadequate supply of physicians serving Medicare beneficiaries in rural areas and increased the use of nurse practitioners, physician assistants, and certified nurse-midwives in these areas. Medicare pays [Rural Health Clinics](#) (RHCs) an all-inclusive rate for medically necessary, face-to-face primary health services and qualified preventive health services furnished by an RHC practitioner. RHC practitioners are physicians, nurse practitioners, physician assistants, certified nurse-midwives, clinical psychologists, and clinical social workers. RHCs are federally designated through the Centers for Medicare and Medicaid Services (CMS).

Federally Qualified Health Centers (FQHCs)

The FQHC benefit under Medicare was added effective October 1, 1991, when Section 1861(aa) of the Social Security Act (the Act) was amended by Section 4161 of the Omnibus Budget Reconciliation Act of 1990. [FQHCs](#) are safety net providers that primarily provide services typically furnished in an outpatient clinic. FQHCs include community health centers, migrant health centers, health care for the homeless health centers, public housing primary care centers, and health center program “lookalikes.” They also include outpatient health programs or facilities operated by a tribe or tribal organization or by an urban Indian organization. FQHCs are paid based on the FQHC Prospective Payment System (PPS) for medically-necessary primary health services and qualified preventive health services furnished by a FQHC practitioner.

Health Center Program look-alikes (LALs) operate and provide services consistent with Health Center Program requirements, although they are not direct HRSA grantees. Together, Health Center Program award recipients and look-alikes ensure health care for the Nation’s underserved communities and vulnerable populations through service provision to all, regardless of ability to pay.

Short Term Prospective Payment System (PPS) Hospitals

A Prospective Payment System (PPS) is a method of reimbursement in which Medicare payment is made based on a predetermined, fixed amount. The payment amount for a particular service is derived based on the classification system of that service (for example, diagnosis-related groups for inpatient hospital services). CMS uses separate PPSs for reimbursement to acute inpatient hospitals, home health agencies, hospice, hospital outpatient, inpatient psychiatric facilities, inpatient rehabilitation facilities, long-term care hospitals, and skilled nursing facilities.

Centers for Medicare & Medicaid Services. (2022). Rural Health Clinic Fact Sheet. Retrieved September 19, 2022 From <https://www.cms.gov/files/document/rhcfactsheetpdf>
Rural Health Information Hub. (2022). Federally Qualified Health Center and the Health Center Program. Retrieved September 19, 2022 From <https://ruralhealthinfo.org/topics/federally-qualified-health-centers>
Centers for Medicare & Medicaid Services. (2022). Prospective Payment Systems-General Information. Retrieved September 19, 2022 From <https://www.cms.gov/medicare/medicare-fee-for-service-payment/prospmedicarefeesvcpmtgen>

Oral Health

The [perception that oral health](#) is in some way less important than and separate from general health has been deeply ingrained in the American consciousness. Many Americans are unaware of ways to preserve oral health and may not recognize signs indicating they are in trouble. Poor oral health can contribute to various diseases including endocarditis, cardiovascular disease, diabetes, HIV/AIDS, osteoporosis, and Alzheimer's disease. Social factors can contribute to a patient's interest in or ability to seek oral health services which include: geography, socioeconomic conditions, oral health literacy, oral health preventive behaviors, and cultural preferences.

In Kentucky, Fluoridation is a major effort of the [Kentucky Oral Health Program](#). In 1951, Maysville became the first community in Kentucky to fluoridate its water supply. Today, approximately 96 percent of our citizens are on a fluoridated water supply, making Kentucky a national leader.

Below are a number of [Factors](#) that can impact obtaining preventive oral health:

- Lack of Access to Care
- Poverty
- Type of Insurance or Lack of Insurance
- Lack of Importance Placed on Oral Health
- Insufficient Oral Health Workforce
- Food Insecurity

In the spring of 2020 a Kentucky Oral Health Coalition [survey](#) revealed the following:

Impacts of Poor Oral Health

- Pain
- Low self-esteem
- Missing school
- Inability to concentrate

Barriers to Oral Health Care

- Cost, including cost of basic dental hygiene products
- Transportation
- Lack of parental knowledge
- Low priority for caregivers and the community

Thompson, et al. (2022). 2021 Kentucky dental workforce update. Retrieved September 19, 2022 From <https://ruralhealth.med.uky.edu/cerh-journal-articles>
Cabinet for Health and Family Services. (2021). Oral health services. Retrieved March 28, 2020 From <https://chfs.ky.gov/agencies/dph/dpqi/hcab/Pages/oralhealth.aspx>
Kentucky Oral Health Coalition. (2016). Making smiles happen. Retrieved March 19, 2022 From <https://kyoralhealthcoalition.org/data/#publications>

Oral Health

Kentucky is among the poorest states in terms of oral health. [American Health Rankings](#) gave Kentucky a 2022 ranking of **30th** out of 50 states for dental care.

- One in five low income adults in Kentucky say their mouth and teeth are in poor condition
- Only **20%** of Kentucky adults enrolled in Medicaid utilize dental services
- **57%** of [Kentucky adults](#) visited the dentist or dental clinic within the past year (2020) for any reason
- **49%** of Kentucky Adults have had permanent teeth extracted
- Only **52%** of [Kentucky Children](#) received the mandatory kindergarten Dental Screening in School Year 2019-20
- **78%** of Kentucky Children received preventive Dental Care in the past year (2019-20)
- Only **51%** of Kentucky Children enrolled in Medicaid or KCHIP in 2019 received Dental Services

According to a [study](#) by the ADA, of the adults in the U.S.:54% ever have difficulty chewing or eating

- **41%** ever avoid smiling
- **40%** ever feel embarrassed
- **36%** ever experience anxiety
- **26%** ever reduce social participation
- **25%** ever have difficulty doing usual activities
- **18%** find it harder to interview for a job

America's Health Rankings. (2022). Retrieved October 3, 2022 From <https://www.americashealthrankings.org/explore/measures/dental/KY>
Centers for Disease Control and Prevention. (2021). BRFSS Prevalence & Trends Data. Retrieved October 3, 2022 From <https://www.cdc.gov/brfss/brfssprevalence/>
2022 Kentucky KIDS COUNT County Data Book, Kentucky Youth Advocates, Louisville, Kentucky. Retrieved October 16, 2022 From <https://kyyouth.org/kentucky-kids-count>
American Dental Association. (2015). Oral Health and Well-Being in the United States. Retrieved October 16, 2022 From <https://www.ada.org/-/media/project/ada-organization/ada/ada-org/files/resources/research/hpi/us-oral-health-well-being.pdf>

Emergency Medical Services

Emergency Medical Services, more commonly known as EMS, is a system that provides emergency medical care. EMS is most easily recognized when emergency vehicles or helicopters are seen responding to emergency incidents. But EMS is much more than a ride to the hospital. It is a system of coordinated response and emergency medical care, involving multiple people and agencies. EMS clinicians are typically the first healthcare practitioner on the scene; they're often the first to identify a healthcare crisis in a community and act as a critical component of emergency management. EMS service providers consist of:

- Emergency Medical Responder (EMR) A certified Emergency Medical Responder (EMR) has a higher level of skill than those trained in basic First Aid.
- Emergency Medical Technician (EMT) are dispatched to the scene by a 911 operator, EMTs assess the patient's condition, while trying to determine the nature and severity of any pre-existing medical conditions. Using pre-determined protocols, they provide emergency care, and transport the patient to the appropriate medical facility.
- Advanced Emergency Medical Technician (AEMT) provide basic and limited advanced emergency medical care to those patients who need more care than can be offered by the EMT Basic. AEMTs function as part of a holistic EMS response and operate under medical oversight.
- Paramedic provide the most extensive pre-hospital care. Paramedics may administer drugs orally or intravenously, interpret electro cardiograms (EKGs), perform endotracheal intubations, and use monitors and other complex equipment. The Paramedic must not only be knowledgeable about medications but must be able to apply this knowledge in a practical sense.

The Kentucky Board of Medical Services 2020 Annual Report shows that there were:

- 605,691 Ground Transports and 10,177 Air Transports
- 17,173 Nalazone Administrations
- 46,003 Traffic / Transportation Incidents
- 8,556 Cardiac Arrest Incidents Reported

As of 2022, Kentucky Board of Emergency Medical Services (KBEMS) reports according to licensure data there were:

- 482 Emergency Medical Responders (EMRs)
- 9,335 Emergency Medical Technicians (EMTs)
- 486 Advanced Emergency Medical Technicians (AEMTs)
- 4,292 Paramedics
- 221 Ambulance Services
- 211 Training & Educational Institutions (TEIs)

Note: See below for data on personnel currently working

National Highway Traffic Safety Administration, (n.d.) What is EMS? Retrieved August 6, 2022 From <https://www.ems.gov/what-is-ems/>

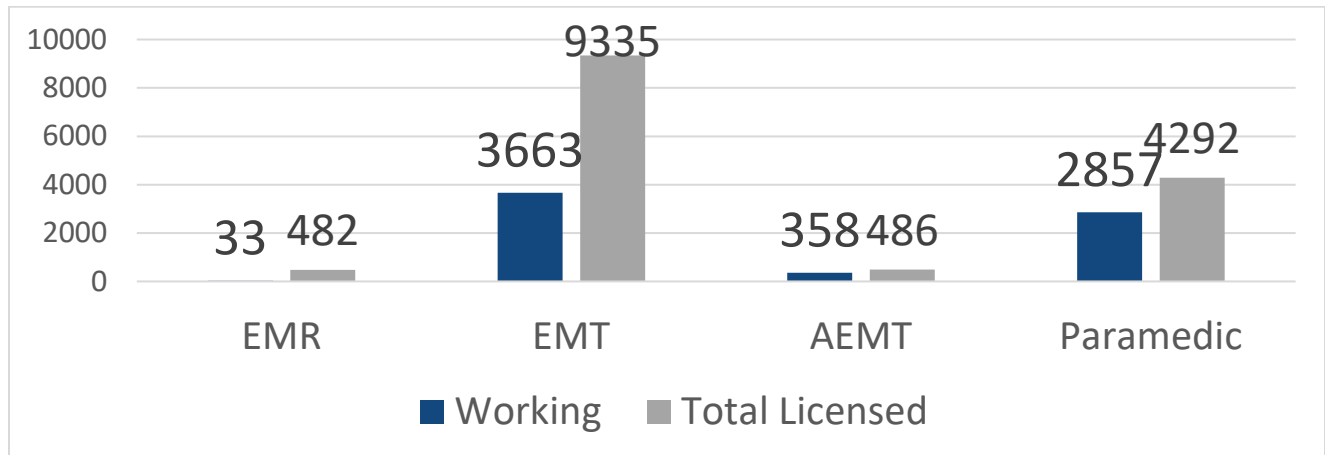
Kentucky Board of Emergency Medical Services (2021) Annual Report, Retrieved August 6, 2022 From <https://kbems.ky.gov/Documents/2020-kbems-annual-report.pdf>

Kentucky Board of Emergency Medical Services. (2022) Certification & Licensure. Retrieved August 6, 2022 From <https://kbems.ky.gov/Certification-And-Licensure/Pages/default.aspx>

Emergency Medical Services

In July of 2022 the Kentucky EMS Task Force Met for the first time to study EMS concerns. Legislators questioned how many licensed EMTs are currently working in Kentucky. KBEMS Interim Executive Director Eddie Slone reported the state has 9,335 licensed EMTs; 3,663 are employed.

Providers Working (Affiliated with a Service)



Source: KBEMSEMS Presentation

There are workforce shortages in all health professions in rural America, and this is no different for EMS. Rural ambulance services disproportionately rely on volunteers to staff ambulances and provide emergency services. [A study published in 2020](#) found that 13% of all EMS professionals serve as volunteers, and of that group 74% reported working in **rural** communities. In that same study, 70% of EMS professionals that said they were being paid reported working in **urban** communities.

A recent article quoted the Edmonson County EMS director, “many ambulance services can only afford to start EMTs at \$11 or \$12 an hour – less than some restaurants are offering these days.” The article also reported that some Paramedics are only paid \$16 to \$17.50 an hour. Another issue is low Medicare and Medicaid reimbursements the director said, “the average cost of a run in Edmonson County is \$880, while the average reimbursement is \$386 and the difference comes from taxpayer dollars.”

Rural geography and road conditions can create problems for EMS access when timely care is important. A 2017 article published in [JAMA surgery](#) found that the national average from the time of a 911 call to arrival on scene was **7 minutes**. However, that time increases to more than **14 minutes** in rural settings.

Kentucky Board of Emergency Medical Services. (2022). Working Providers. Retrieved September 6, 2022 From <https://kbems.ky.gov/KSTARS/Pages/index.aspx>
 Cross, Al, (2021), Kentucky Health News, Short staffing of Kentucky ambulance services leads to deaths, Retrieved August 14, 2022 From. <https://ci.uky.edu/kentuckyhealthnews>
 Cash, Rebecca E. et al. (2020). “Comparison of Volunteer and Paid EMS Professionals in the United States”. Retrieved From <https://doi.org/10.1080/10903127.2020.1752867>
 Mell, Howard K. et al. “Emergency Medical Services Response Times in Rural, Suburban, and Urban Areas.” JAMA surgery, 152(10), 983–984. <https://doi.org/10.1001/jamasurg.2017.2230>.

Health Departments

[The Kentucky Department for Public Health](#) (DPH) is responsible for developing and operating state public health programs and activities for the citizens of Kentucky. Local Health Departments (LHD) are within the DPH and have a Shared Governance structure: Some local health units are led by employees of the state and some are led by employees of local government. There are **61** regional health departments serving Kentucky's 120 counties.

Seven Core Services required by Health Departments

1. **Enforcement of Public Health Regulation.** Local health departments enforce public health regulations by providing oversight, education, and assurance of compliance with federal, state, and local public health laws designed to protect and promote the health of the public. The scope of regulations includes sanitation and safety, vital statistics, medical enforcement, city and county ordinances, and local boards of health regulations.
2. **Surveillance of Public Health.** Surveillance is a process of monitoring public health conditions by the ongoing collection, analysis, and sharing of information. The data gained from surveillance are used to develop programs to improve wellbeing and health in the Commonwealth of Kentucky.
3. **Communicable Disease Control.** Communicable disease control is the process through which local health departments prevent the spread of infectious disease. The key activities include immunizations, investigations and treatment of outbreaks, and public education.
4. **Public Health Education.** A local health department informs and educates individuals, groups, and communities about good health in order to promote healthy lifestyle choices and mitigate health risks. Public health education also provides critical information that safeguards health and safety in response to disasters or other health crises.
5. **Public Health Policy.** Public Health policy encompasses the broad standards and framework that govern a community's public health activities. Policies are based on data from surveillance and the public's directives, usually from public officials, based on that information. Policies are often initiated at the national level but defined and refined to meet needs identified at the state and local levels.
6. **Families and Children Risk Reduction.** Local health departments reduce health risks and problems in the community by identifying and providing needed services or referring individuals to other appropriate providers.
7. **Disaster Preparedness.** In collaboration with other disaster and emergency service providers, health departments develop and maintain policies and procedures for responding to disasters. While communities may never actually experience a disaster, some level of preparation is required.

Kentucky Cabinet For Health and Family Services. (2022). Department for Public Health. Retrieved August 6, 2022 From <https://www.chfs.ky.gov/agencies/dph/dafm/Pages/lhd.aspx>
Kentucky General Assembly. (2022). Local Health Department Financial Management Requirements. Retrieved August 6, 2022 From <https://apps.legislature.ky.gov/law/kar/titles/902/008/170/>

Mental Health

Public mental health services in Kentucky are administered and provided by the Kentucky Cabinet of Health and Family Services—[Division of Behavioral Health](#). Substance use and addiction treatment services are overseen by the Office of Drug Control Policy.

The Kentucky Division of Behavioral Health (DBH) is responsible for the administration of state and federally funded mental health and substance abuse treatment services throughout the commonwealth.

The treatment services are achieved with the assistance of the five branches described below:

1. Adult Mental Health and Recovery Services Branch
2. Adult Substance Abuse Treatment and Recovery Services Branch
3. Behavioral Health Prevention and Promotion Branch
4. Children's Behavioral Health and Recovery Services Branch
5. Program Areas

[Mental Health America](#) Gave Kentucky a 2022 ranking of **42nd** out of the 50 states plus District of Columbia for Adults with Any Mental Illness (AMI).

- Kentucky received a ranking of **21st** for Youth Prevalence of Mental Illness (Youth With At Least One Major Depressive Episode (MDE) in the Past Year)
- Kentucky received a ranking of **26th** for Adults with Substance Use Disorder in the Past Year.
- Kentucky received a ranking of **23rd** for Youth with Substance Use Disorder in the Past Year.
- Kentucky ranks **30th** in Mental Health Providers with a ratio of 420:1.

Americans Health Rankings gave Kentucky a ranking of **45th** for frequent mental distress.

The [National Alliance on Mental Illness](#) released a 2021 Kentucky fact sheet reporting:

- 746,000 adults in Kentucky have a mental health condition
- 189,000 adults in Kentucky have a serious mental illness
- 43.6% of adults in Kentucky reported symptoms of anxiety or depression (22.8% were unable to get needed counseling or therapy)
- 40,000 Kentuckians age 12-17 have depression
- 800 Kentucky lives were lost to suicide and 157,000 adults had thoughts of suicide in the last year.

Kentucky Cabinet For Health And Family Services. (2022). Department for Behavioral Health, Developmental and Intellectual Disabilities. Retrieved September 9, 2022 From <https://www.chfs.ky.gov/agencies/dbhdid/Pages/default.aspx>

National Alliance on Mental Illness. (2021). State Fact Sheets/Kentucky. Retrieved September 9, 2022 From <https://www.nami.org/NAMI/media/NAMIMedia/StateFactSheets/KentuckyStateFactSheet.pdf>

Long Term Care

Kentucky is home to more than [755,000 seniors](#) aged 65 or older who account for approximately 17% of the population. Some studies suggest that about half of these individuals will require skilled nursing care at some point in their lives.

Long-term care involves a variety of services designed to meet a person's health or personal care needs during a short or long period of time. These services help people live as independently and safely as possible when they can no longer perform everyday activities on their own.

Because Kentucky is a [Certificate of Need](#) (CON) state, an application must be submitted and approved by the KY Cabinet for Health and Family Services before a new Long-Term Care Facility can be constructed. The Kentucky CON process prevents the proliferation of health care facilities, health services and major medical equipment that increase the cost of quality health care in the commonwealth. There are [318 Long Term Care](#) facilities in Kentucky; Kentucky Urban 159, Kentucky Rural 159, Kentucky Appalachia 89 and Kentucky Delta 48.

These facilities are licensed and overseen for state and federal regulatory compliance by the KY Office of the Inspector General. Half of America's 65-year-olds will need some paid Long-Term Care (LTC) services in their lifetime. Many believe that Medicare covers LTC, but in fact, Medicare generally doesn't pay for LTC stays in a nursing home. Medicaid is the largest public payer of LTC but only for people who are poor or who become poor from paying for long-term care or medical care. Kentucky seniors who require nursing home care can expect to pay [\\$7,330 a month](#) a month for a semiprivate room. Private accommodations cost about \$600 more per month.

A 2020 Long-Term Services and Supports (LTSS) [State Scorecard](#) that measured state level performance of LTSS systems that assist older adults, people with physical disabilities and family caregivers, placed Kentucky in the bottom quartile with an Overall Score of **47**. Five key dimension scores were as follows:

Dimensions	Rank
Affordability & Access	34
Choice of Setting & Provider	37
Quality of Life & Quality of Care	51
Support for Family Caregivers	41
Effective Transitions	44

[Source: AARP Foundation](#)

United States Census Bureau. (2022). Population and People. Retrieved September 9, 2022 From <https://data.census.gov/profile?q=0400000US21>

Kentucky Cabinet For Health And Family Services. (n.d.). Division of Certificate of Need. Retrieved September 8, 2022 From <https://www.chfs.ky.gov/agencies/os/oig/dcn/Pages/cn.aspx>

Kentucky Cabinet For Health And Family Services. (2022). Health Care Facilities and Regulations. Retrieved September 8, 2022 From <https://www.chfs.ky.gov/agencies/os/oig/dhc/Pages/hcf.aspx>

<https://www.caring.com/senior-living/nursing-homes/kentuckymonth>.

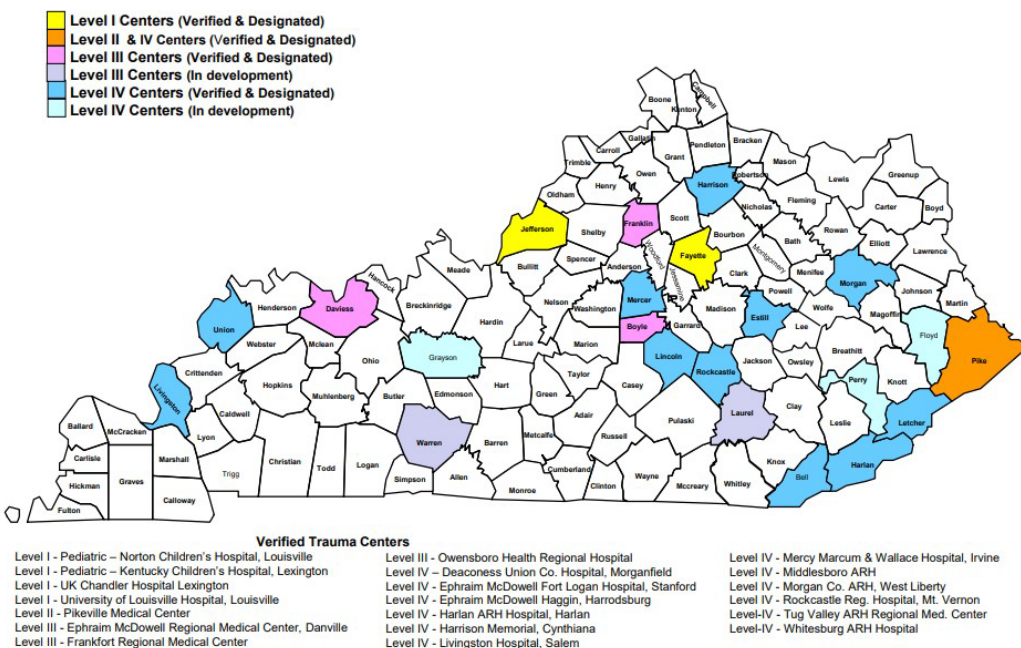
AARP Foundation. (2020). Long-Term Services & Supports State Scorecard. Retrieved September 9, 2022 From <https://www.longtermscorecard.org/databystate/state?state=KY>

Trauma Care

Trauma Care across the United States are identified in two fashions – A designation process and a verification process. The different levels (ie. **Level I, II, III, IV or V**) refer to the kinds of resources available in a trauma center and the number of patients admitted yearly. These are categories that define national standards for trauma care in hospitals. Categorization is unique to both Adult and Pediatric facilities.

- **Level I** - Level I Trauma Center is a comprehensive regional resource that is a tertiary care facility central to the trauma system. A Level I Trauma Center is capable of providing total care for every aspect of injury – from prevention through rehabilitation.
- **Level II** - A Level II Trauma Center is able to initiate definitive care for all injured patients.
- **Level III** - A Level III Trauma Center has demonstrated an ability to provide prompt assessment, resuscitation, surgery, intensive care and stabilization of injured patients and emergency operations.
- **Level IV** - A Level IV Trauma Center has demonstrated an ability to provide advanced trauma life support (ATLS) prior to transfer of patients to a higher-level trauma center. It provides evaluation, stabilization, and diagnostic capabilities for injured patients.
- **Level V** - A Level V Trauma Center provides initial evaluation, stabilization and diagnostic capabilities and prepares patients for transfer to higher levels of care.

Hospitals in the Kentucky Trauma System (March, 2022)



Source: [Kentucky Hospital Association](https://www.kyha.com/assets/docs/TraumaDocs/KentuckyTraumaSystemMap.pdf)

American Trauma Society. (2022). Trauma Center Levels. Retrieved October 4, 2022 From <https://www.amtrauma.org/page/traumalevels>

Kentucky Hospital Association. (2022) Hospitals in the Kentucky Trauma System. (2022). Retrieved October 4, 2022 From <https://www.kyha.com/assets/docs/TraumaDocs/KentuckyTraumaSystemMap.pdf>

Hepatitis

Hepatitis means inflammation of the liver. When the liver is inflamed or damaged, its function can be affected. Heavy alcohol use, toxins, some medications, and certain medical conditions can all cause hepatitis. However, hepatitis is often caused by a virus. In the United States, the most common hepatitis viruses are:

- hepatitis A virus
- hepatitis B virus
- hepatitis C virus

Although each can cause similar symptoms, they are spread in different ways and can affect the liver differently. Hepatitis A is usually a short-term infection. Hepatitis B and hepatitis C can also begin as short-term infections, but in some people, the virus remains in the body and causes chronic (long-term) infection. There are vaccines to prevent hepatitis A and hepatitis B; however, there is no vaccine for hepatitis C. The hepatitis C virus is usually spread when someone comes into contact with blood from an infected person. This can happen through:

- Sharing drug-injection equipment
- Birth
- Healthcare Exposures
- Sex with an infected person
- Unregulated body piercing or tattoos
- Sharing personal items
- Blood transfusions or organ transplants

There are approximately 78,000 people living with Hepatitis C in Kentucky, 99% of infections can be cured. The CDC reports Kentucky is in the high rate category with 3.2 Cases/100K Population when compared to other states.

In 2018, Kentucky was the first state to pass a law to require all pregnant women to be screened for hepatitis C during their first prenatal visit. Pregnant women who test positive cannot begin treatment until after they give birth. They are provided education on the disease and lifestyle habits until the baby is born. Statistically, 5 percent to 15 percent of infants born to a woman with active Hepatitis C will go on to develop chronic hep C that requires treatment.

Centers for Disease Control and Prevention. (2022). Viral Hepatitis. Retrieved September 9, 2022 From <https://www.cdc.gov/hepatitis/statistics/2020surveillance/hepatitis-c/figure-3.3.htm>

Kentucky Cabinet For Family Services, (2022). Kentucky Hepatitis C Elimination Plan. (n.d.). Retrieved September 9, 2022 From

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

Norton Healthcare. (2022). Kentucky is first state to screen pregnant women for hepatitis C. (2018) Retrieved September 2, 2022 From <https://nortonhealthcare.com/news/hepatitis-c-pregnancy/>

Hepatitis C

Treatment is recommended for all people, unless pregnant, with acute or chronic hepatitis C (including children three and older and adolescents). Current treatments usually involve just eight to 12 weeks of oral therapy (pills) and cure more than 90 percent with few side effects. In Kentucky, treatment can be obtained without sobriety or advanced liver disease.

Too [few people](#) are treated for Hepatitis C:

- Only 1 in 3 people with insurance get timely treatment
- 46% of people with Medicaid were 46% less likely to receive treatment than those with private insurance
- 27% of Medicaid recipients of other races were up to 27% less likely to get timely treatment than White Medicaid recipients

When safe and effective direct-acting antiviral treatment first became available in 2014, it cost about \$90,000 per patient; while cost has come down considerably, the high cost of treatment [remains a barrier](#) to treatment for many. Even among insured people, only about 1 in 3 receive timely Hepatitis C treatment, and this is even lower among people with Medicaid.

Many insurance providers still have restrictions in place, preventing many people with hepatitis C from accessing lifesaving treatments. These include:

- The patient must have liver damage (called “fibrosis”)
- The doctor who writes the prescription must be a liver disease or infectious disease specialist
- The patient must be sober
- The doctor must receive preauthorization approval from the insurance provider to start treatment
- Treatment is not routinely integrated into primary health care
- Not enough primary care providers are treating hepatitis C

Stigma and discrimination can lead to many negative consequences for people living with viral hepatitis including:

- Depression
- Worsening mental health status
- Fear of discovery
- Failure to follow medical recommendations
- Discrimination

To ensure all people with Hepatitis C receive treatment, we must promote best practices for providers to offer simplified testing and treatment.

Centers for Disease Control and Prevention. (2022). Vital Signs. (2020). Retrieved August 7, 2022 From <https://www.cdc.gov/vitalsigns/hepc-treatment/index.html>

Substance Use Disorders

Substance use disorders (SUD) occur when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home.

Drug addiction, also called substance use disorder, is a disease that affects a person's brain and behavior and leads to an inability to control the use of a legal or illegal drug or medication. Substances such as alcohol, marijuana, and nicotine also are considered drugs. When you're addicted, you may continue using the drug despite the harm it causes. Despite advances, we still do not fully understand why some people develop an addiction to drugs or how drugs change the brain to foster compulsive drug use. The [National Institute on Drug Abuse \(NIDA\)](#), believe that increased understanding of the basics of addiction will empower people to make informed choices in their own lives, adopt science-based policies and programs that reduce drug use and addiction in their communities, and support scientific research that improves the Nation's well-being.

Many people don't understand why or how other [people become addicted](#) to drugs. They may mistakenly think that those who use drugs lack moral principles or willpower and that they could stop their drug use simply by choosing to. In reality, drug addiction is a complex disease, and quitting usually takes more than good intentions or a strong will. Drugs change the brain in ways that make quitting hard, even for those who want to.

As with other diseases and disorders, the likelihood of developing an addiction differs from person to person, and no single factor determines whether a person will become addicted to drugs. In general, the more [risk factors](#) a person has, the greater the chance that taking drugs will lead to drug use and addiction.

Substance misuse, particularly the diversion and abuse of prescription drugs along with heroin, methamphetamine and illicit fentanyl, remains one of the most critical public health and safety issue facing Kentucky. For years, the [annual number](#) of Kentuckians who died from drug overdoses steadily climbed exacting a disastrous toll on families, communities, social services and economic growth.

The diversion and abuse of prescription drugs, heroin, methamphetamine and illicit fentanyl have contributed to an alarming, sustained increase in [overdose deaths](#).

- In 2019, there were **1,316** overdose deaths in Kentucky
- In 2020, there were **1,964** overdose deaths, a **49% increase** from 2019
- In 2021, there were **2,250** overdose deaths, a **14.5% increase** from 2020

National Institute on Drug Abuse. (2022). About Addiction Science. (n.d.). Retrieved July 7, 2022 From <https://nida.nih.gov/research-topics/addiction-science>

Kentucky Office of Drug Control Policy. (2022). 2021 Kentucky Overdose Fatality Report. Retrieved July 7, 2022 From <https://odcp.ky.gov/Pages/Reports.aspx>

National Institute on Drug Abuse. (2021) Understanding Drug Use and Addiction. Retrieved July 7, 2022 From <https://nida.nih.gov/publications/drugfacts/understanding-drug-use-addiction>

National Institute on Drug Abuse. (2022). What is Drug Addiction. Retrieved July 7, 2022 From <https://nida.nih.gov/publications/drugs-brains-behavior-science-addiction/drug-misuse-addiction>

Drug Overdose Deaths

[The Kentucky Office of Drug Control Policy \(ODCP\)](#) believes that the most significant contributors have been the rise in illicit fentanyl and the indirect effects from the COVID-19 pandemic, which brought a rise in overdose deaths and new addictions nationwide.

An opioid was involved in 90% of all overdose deaths in Kentucky, and fentanyl was detected in more than 70% of those cases not only in Kentucky, but nationwide. This problem is exacerbated by the widespread availability of potent inexpensive methamphetamine. COVID-19 caused interruptions to people’s daily lives bringing about greater isolation, economic concerns and increased anxiety about the future, public health, sickness, and the ability to meet one’s basic needs. All of these are detrimental to those struggling with addiction or in recovery.

Kentucky Counties with the **Highest Rates** of Drug Overdose Deaths in 2021 according to Kentucky Office of Drug Control Policy were:

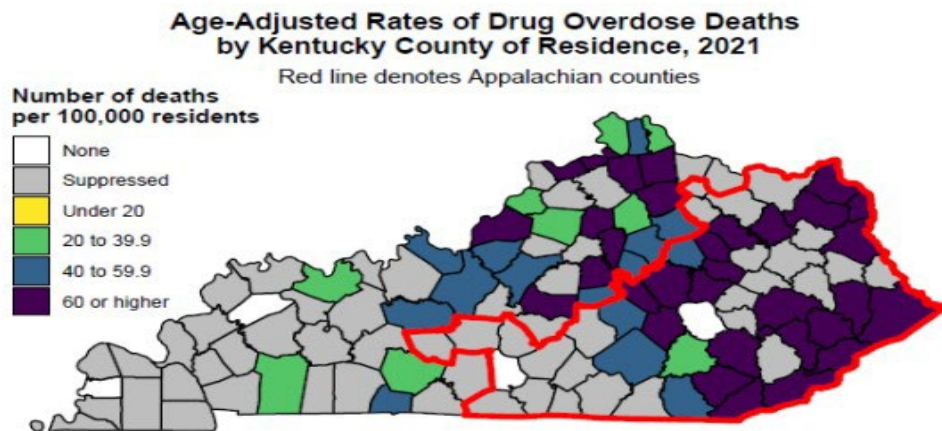
Kentucky County	Classification	Rate of Drug Overdose Deaths per 100,000 Residents	Number of Drug Overdose Deaths
1 Estill	Rural	147.89	22
2 Gallatin	Urban	145.89	12
3 Perry	Rural	141.81	35
4 Rowan	Rural	130.82	27
5 Knott	Rural	122.67	16

[Source: Kentucky Office of Drug Control Policy](#)

Age-Adjusted Rates of Drug Overdose Deaths by County of Residence

County Level Maps

Map of Age-Adjusted Overdose Mortality Rates



Produced by the Kentucky Injury Prevention and Research Center, as bona fide agent for the Kentucky Department for Public Health. May 2022.
Data source: Kentucky Death Certificate Database, Kentucky Office of Vital Statistics, Cabinet for Health and Family Services.

Kentucky Office of Drug Control Policy. (2022). 2021 Combined Annual Report. Retrieved July 7, 2022 From <https://odcp.ky.gov/reports/2021%20Annual%Report%20-20FINAL%206-30-22.pdf>

Alcohol Abuse

Most American adults [consume alcohol](#) at least once in their lifetime. Among them, **6.7%** will develop Alcohol Use Disorder (AUD).

Binge drinking is a serious but preventable public health problem. Binge drinking is defined as consuming 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women.

Heavy drinking is defined as consuming 15 or more drinks per week for men or 8 or more drinks per week for women, and any alcohol use by people younger than 21 or pregnant women.

[Kentucky Alcohol Abuse Statistics](#)

- 10% of Kentucky high school students report binge drinking compared to 14% nationally.
- 14% of Kentucky adults report binge drinking compared to 17% nationally
- 1,722 people were killed in crashes involving an alcohol-impaired driver in Kentucky from 2009-2018
- An average of 2,206 annual deaths in Kentucky are attributable to excessive alcohol use
- 84% of people in Kentucky who die from excessive alcohol use are under the age of 21
- 2.7% of people in Kentucky who die from excessive alcohol use are under the age of 21
- 71% of people who die from excessive alcohol use in Kentucky are male

Treatment & Recovery Resources

People often think there are only two places to get help for alcohol problems Alcoholics Anonymous (AA) or residential rehab. But today there are more choices than you might expect. Fortunately, researchers know more than ever about how drugs affect the brain and have found treatments that can help people recover from drug addiction and lead productive lives. Healthcare professionals now provide up-to-date treatments backed by science. Care is offered at different levels of intensity in a variety of settings. Many outpatient options allow people to maintain their regular routines and their privacy, too, if desired. A Primary Care Doctor can be a good source for treatment referrals and medications.

- [The Kentucky Office of Drug Control Policy](#) website provides Treatment and Recovery Resources.
- [The Kentucky Cabinet for Health and Family Services](#) website provides resources for Adolescent Substance Use and Treatment Services.

National Center for Drug Abuse Statistics. (2022). Alcohol Abuse Statistics. (2020). Retrieved July 7, 2022 From <https://drugabusestatistics.org/alcohol-abuse-statistics/>
Kentucky Office of Drug Control Policy. (2022). Treatment and Recovery Resources. (n.d.) Retrieved July 7, 2022 From <https://odcp.ky.gov/Resources/Pages/Treatment-and-Recovery-Resources.aspx>
Kentucky Cabinet for Health and Family Services. (2022). Adolescent Substance Use Treatment Services. (2022). Retrieved July 7, 2022 From <https://dbhdid.ky.gov/dbh/adolescent.aspx#>

Diabetes

Diabetes is a chronic (long-lasting) health condition that affects how your body turns food into energy. [Diabetes](#) is a group of diseases characterized by high blood sugar. When a person has diabetes, the body either does not make enough insulin or is unable to properly use insulin. There are three main types of diabetes; Type 1, Type 2 and Gestational Diabetes.

[Type 1](#) diabetes is thought to be caused by an autoimmune reaction (the body attacks itself by mistake). This reaction stops your body from making insulin. Approximately 5-10% of the people who have diabetes have type 1. Symptoms of type 1 diabetes often develop quickly. It's usually diagnosed in children, teens, and young adults. If you have type 1 diabetes, you'll need to take insulin every day to survive. Currently, no one knows how to prevent type 1 diabetes.

With [Type 2](#) diabetes, your body doesn't use insulin well and can't keep blood sugar at normal levels. About 90-95% of people with diabetes have type 2. It develops over many years and is usually diagnosed in adults (but more and more in children, teens, and young adults). You may not notice any symptoms, so it's important to get your blood sugar tested if you're at [risk](#). Type 2 diabetes can be prevented or delayed with healthy lifestyle changes, such as:

- Losing weight
- Eating healthy food
- Being active

[Gestational diabetes](#) develops in pregnant women who have never had diabetes. If you have gestational diabetes, your baby could be at higher risk for health problems. Gestational diabetes usually goes away after your baby is born. However, it increases your risk for type 2 diabetes later in life. Your baby is more likely to have obesity as a child or teen and develop type 2 diabetes later in life.

In the United States, 96 million adults, more than 1 in 3 have [prediabetes](#). More than 8 in 10 of them don't know they have it. With prediabetes, blood sugar levels are higher than normal, but not high enough for a type 2 diabetes diagnosis. Prediabetes raises your [risk](#) for type 2 diabetes, heart disease, and stroke. If you have prediabetes find education, support and resources to prevent or delay health complications. The Centers for Disease Control and Prevention ([CDC](#)) has a recognized lifestyle change program that can help you take healthy steps to reverse it.

Diabetes

Diabetes occurs among the entire population, it tends to be more prevalent among certain demographic groups:

- Men, compared with women
- American Indian/Alaska Native adults, compared with other racial and ethnic groups
- Adults with less than a high school education, compared with those with a higher education level (prevalence decreases as educational attainment increases)
- Adults with income less than \$25,000, compared with other income levels Older adults, compared with younger adults

According to [Americas Health Rankings](#), diabetes was the nation's [8th leading](#) cause of death in 2020, accounting for 102,188 deaths annually. Diabetes was Kentucky's [6th leading](#) cause of death in 2020, accounting for 1,578 deaths. Diabetes is the leading cause of kidney failure, nontraumatic lower-limb amputations and blindness among adults.

- Kentucky has the [4th](#) highest mortality rate from diabetes in the U.S
- The diabetes rate in Appalachia is [17%](#) compared to 12% for non-Appalachia
- Diabetes is the 2nd most costly common chronic disease
- Kentucky Medicaid paid [\\$129 Million](#) for all diabetes non-prescription claims in 2019
- Kentucky Education Health Plan paid [\\$216 Million](#) for combined medical and prescription drug costs in 2019
- [10,462](#) Kentuckians visited the emergency department a total of 16,497 times for diabetes in 2019.

The National Diabetes Prevention Program ([NDPP](#)) is a CDC-recognized, research-based lifestyle change program focused on making small sustainable changes in healthy eating and physical activity. Studies show people with prediabetes who take part in a structured lifestyle change program can cut their risk of developing type 2 diabetes by 58 percent (71 percent for people 60 and older). Diabetes self-management education and support ([DSME](#)) can help you learn to manage your diabetes as part of your daily life. DSME is proven to:

- Improve blood sugar control leading to decreased risk for diabetes complications
- Increase self-confidence about taking care of your diabetes
- Increase healthy eating and physical activity
- Improve quality of life

America's Health Rankings. (2022). Diabetes. Retrieved September 4, 2022 From

<https://www.americashealthrankings.org/explore/annual/measure/diabetes>

Kentucky Cabinet for Health and Family Services. (2021). 2021 Diabetes Report. Retrieved September 6, 2022 From <https://www.chfs.ky.gov/agencies/dph/dpqi/cdpb/dpcp/2021DiabetesReport.pdf>

Centers for Disease Control and Prevention. (2022). National Diabetes Prevention Program. (2022).

Retrieved September 6, 2022 From <https://www.cdc.gov/diabetes/prevention/index.html>

Kentucky Cabinet for Health and Family Services. (2022). Diabetes Prevention and Control Program. (2022). Retrieved September 6, 2022 From

<https://www.chfs.ky.gov/agencies/dph/dpqi/cdpb/Pages/diabetes.aspx>

Cancer

[Cancer](#) continues to be the **second** most common cause of death in the United States, after heart disease. A total of 1.9 million new cancer cases and 609,360 deaths from cancer are expected to occur in the U.S. in 2022, which is about 1,670 deaths a day. The burden of cancer is [particularly elevated](#) in the **Commonwealth of Kentucky** and its 54-county Appalachian region, where cancer is the **leading cause of death**. Kentucky's high rates of cancer have been attributed to a wide range of socioeconomic, behavioral, environmental, and policy influences, resulting in numerous disparities.

The American Lung Association's annual report found that Kentucky has the highest incidence rate in the U.S. **51st (last) in the nation (last) for lung cancer incidence at 89.4 per 100,000 people**. Incidence refers to the number of new cases of lung cancer in each state. The national lung cancer incidence is 57.7 per 100,000 people. The report also found that Kentucky ranked:

- **41st** in the nation (bottom) for survival at 29.3%
- **45th** in the nation (top) for lung cancer screening at 14.6%
- **23rd** in the nation (average) for surgery at 19.8%
- **18th** in the nation (above average) for lack of treatment at 18.8%

Everyone is at [risk of developing cancer](#), although the likelihood increases greatly with age; **80%** of the people diagnosed with cancer in the U.S. are **55** years of age or older and **57%** are **65** or older. Certain behaviors and other modifiable factors also increase risk, such as smoking, having excess body weight, drinking alcohol, and eating an unhealthy diet. In the U.S., an estimated **40 out of 100 men and 39 out of 100 women** will develop cancer during their lifetime. Cancer can develop anywhere in the body. It starts when cells grow out of control and crowd out normal cells. This makes it hard for your body to work the way it should. There are many types of cancer. It's not just one disease. Cancer can start in the lungs, the breast, the colon, or even in the blood. Cancers are alike in some ways, but they are different in the ways they grow and spread.

[Overall](#), breast, lung and bronchus, prostate, and colorectal cancers are the most common cancers in both rural and urban areas in the U.S., accounting for almost 50% of all new cancer cases. The most common causes of cancer deaths are lung and bronchus, colorectal, pancreatic, and breast cancers, responsible for nearly 50% of all deaths from cancer.

American Cancer Society, (2022). Cancer Facts and Figures. (2022). Retrieved August 2, 2023 From <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer=facts-figures-2022.html>

Rodriguez, et al. (2018). A Social-Ecological Review of Cancer Disparities in Kentucky. Southern Medical Journal, 111(4), 213-219. Retrieved August 3, 2023 From <https://pubmed.ncbi.nlm.nih.gov/29719033/>

American Lung Association. (2022). Kentucky Has Highest Lung Cancer Incidence Rate in the Nation. (2022). Retrieved August 2, 2023 From <https://www.lung.org/media/press-releases/solc-2021-ky>

National Cancer Institute. (2022). Cancer Map Stories. Retrieved August 3, 2023 From <https://gis.cancer.gov/mapstory/rural-urban/index.html>

Cancer

[Evidence](#) suggests that some cancers are more common in **rural areas** while others are more common in **urban areas**. Among the four most common cancers, lung and colorectal cancers occur more often in rural populations. The elevated incidence rates of lung cancer in rural areas are mostly attributed to higher rates of tobacco use, while the elevated incidence of colorectal cancer rates is for the most part attributed to obesity and lower adherence to screening. Conversely, female breast cancer and prostate cancer incidence rates tend to be higher in urban areas, which is primarily attributed to a greater percentage of the population being screened and earlier diagnosis. Rural residents also face challenges related to accessing healthcare services. Rural areas often have fewer primary and specialty care physicians as well as fewer home and community-based service providers compared to urban areas. [Although an estimated 17%-20%](#) of the U.S. population resides in rural areas, only **3%** of medical oncologists practice in rural communities, and over 70% of counties in the U.S. do not have medical oncologists. Persistent poverty counties in the U.S. are almost exclusively rural. These areas face social, structural, and behavioral challenges that may increase residents' risk of developing cancer. Populations living in rural communities have higher rates of risky health behaviors such as tobacco use and poor diet, placing them at higher risk of cancer and chronic diseases.

[Death rates](#) for the leading causes of cancer death – lung, colorectal, pancreatic, and breast cancers – are higher in rural areas. Disparities in death rates between rural and urban areas are particularly large for lung cancer and relatively small for breast and pancreatic cancers. Evidence suggests that progress in reducing cancer death rates for all cancers combined and for most common cancers has been slower in rural than in urban areas, further widening the disparity in mortality.

According to the National Cancer Institute data, [Kentucky](#) had a cancer diagnosis rate of **509.7** new diagnoses per 100,000 people, and a death rate of **194.2** deaths per 100,000 people – **significantly higher** than the overall U.S. cancer diagnosis rate of 435.6 and cancer death rate of 155.9.

In Kentucky, the top cancer by rate of new cancer cases is female breast cancer, but more people in Kentucky die of lung and bronchus cancer, which is in line with national trends, the [CDC data shows](#).

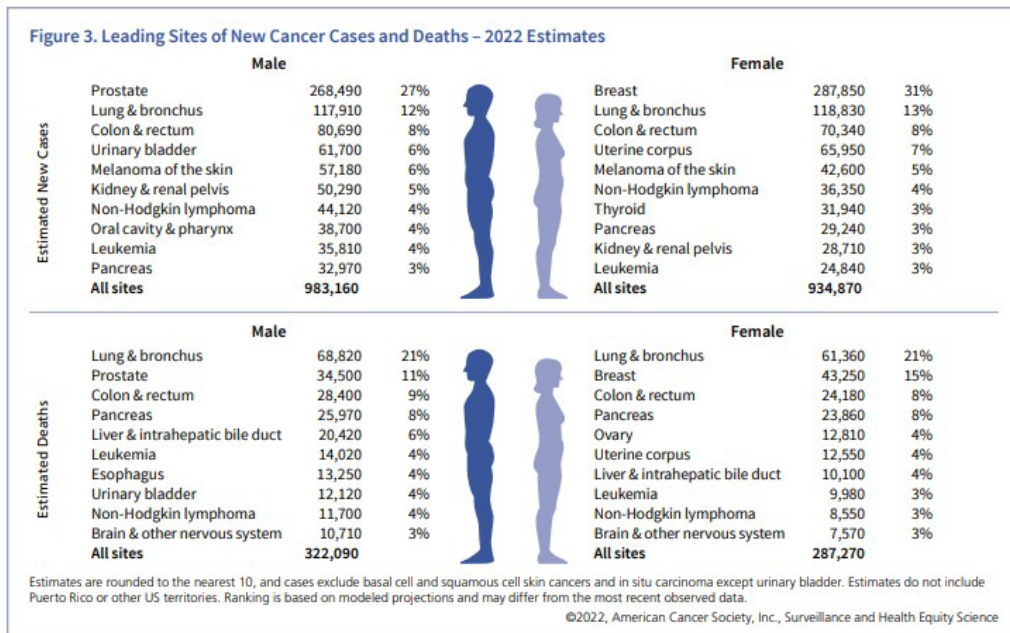
National Cancer Institute. (2022). Rural-Urban Disparities in Cancer. (2021). Retrieved August 4, 2022 From <https://gis.cancer.gov/mapstory/rural-urban/index.html>

National Cancer Institute. (2022). State Cancer Profiles. (2020). Retrieved August 4, 2022 From [State Cancer Profiles > Quick Profiles](#)

Centers for Disease Control and Prevention. (2022). National Center for Health Statistics. Kentucky. (2022) Retrieved August 5, 2022 From <https://www.cdc.gov/nchs/pressroom/states/kentucky/ky.htm>

Cancer

The [American Cancer Society](https://www.cancer.org/) reports that in 2023 there will be 30,270 estimated new cases of cancer and 10,090 deaths in Kentucky.



Source: [American Cancer Society](https://www.cancer.org/)

Commonly used cancer-related terms:

Incidence - A measure of disease that allows us to determine a person's probability of being diagnosed with a disease during a given period of time. Therefore, incidence is the number of newly diagnosed cases of a disease.

Prevalence - A measure of disease that allows us to determine a person's likelihood of having a disease. Therefore, the number of prevalent cases is the total number of cases of disease existing in a population.

Morbidity - Another term for illness. A person can have several co-morbidities simultaneously. So, morbidities can range from Alzheimer's disease to cancer to traumatic brain injury. Morbidities are NOT deaths.

Mortality - Another term for death. A mortality rate is the number of deaths due to a disease divided by the total population.

Kentucky has the unfortunate distinction of being [Number 1 in incidence and mortality rates](#) of cancer per capita in the United States, and the eastern part of it faces significantly higher rates of mortality and morbidity, due to heart and lung disease, diabetes, and cancer, than the rest of the state and country.

American Cancer Society. (2022). Cancer Statistics Center. Retrieved August 6, 2022 From <https://cancerstatisticscenter.cancer.org/#/>

Youth Well Being

The latest edition (2022) of the [Kentucky Youth Advocates Data Book](#) ranks Kentucky **37th** (1 being the best) in Overall Child Well-Being. The Data Book tracks overall child well-being along four domains:

- **38th** Economic well being
 - 22% of Kentucky children live in poverty (below 100% FPL)
 - 31% of Kentucky Appalachia
 - 27% of Kentucky Rural
 - 23% of Kentucky Delta
 - 17% of Kentucky Urban
 - 31% of children parents lack secure employment
 - 24% of children live in households with a high housing cost burden
 - 8% of teens not in school are not working
- **26th** Education
 - 59% of young children (ages 3 & 4) are not in school
 - 65% of fourth-graders are not proficient in reading
 - 71% of eight-graders are not proficient in math
 - 9% of high school students are not graduating on time
- **38th** Health
 - 8.5% of babies born are low birth-weight
 - 4% of children are without health insurance
 - 35 child and teen deaths per 100,000
 - 39% of children and teens (ages 10 to 17) are overweight or obese
- **42nd** Family and Community
 - 35% of children live in single-parent families
 - 10% of children live in families where the household head lacks a high school diploma
 - 14% of children live in a high-poverty area
 - 24 teen births per 1,000

There is no consensus around a single definition of well-being, but there is general agreement that at minimum, well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning.

Youth Well Being

Nearly 1 in 4 Kentuckians are children and the past few years have certainly brought trauma and uncertainty with a deadly tornado in Western Kentucky and historic flooding in Eastern Kentucky. While the COVID-19 pandemic has passed it appears that as a result there are some academic and emotional setbacks. Fewer 4th graders are reading at grade level and fewer 8th graders have reached proficiency in math. Children are experiencing mental health challenges along with conditions that make life harder, such as poverty community violence, discrimination and hunger.

[Kentucky Youth Advocates 2022 Data Book](#) reveals:

- Nearly **1 in 6** sixth graders said they deal with depression and anxiety
- Kentucky continues to outpace the U.S. in youth suicide:
 - Kentucky **10.8%**
 - U.S. 12.2%

[Mental Health America](#) reports on progress for Kentucky State School Mental Health Policies:

- Kentucky only has one school psychologist for every 2, 057 students (the recommended ratio is 1:500)
- Kentucky only has one school social worker for every 3,400 students (the recommended ratio is 1:250)
- Kentucky only has one school counselor for every 425 students (the recommended ration is 1:250)

[Adverse Childhood Experiences](#) (ACEs) are stressful or traumatic events that may have a lasting impact on children's health and well-being. Early experiences have a broad and profound impact on an individual's development and subsequent emotional, cognitive, social and biological functioning.

[American Health Rankings](#) (2022) indicate that **19.5%** of Kentucky Children (U.S. 14%) ages 0-17 experienced **two or more** of the following:

- parental divorce or separation
- living with someone who had an alcohol or drug problem
- neighborhood violence victim or witness
- living with someone who was mentally ill
- suicidal or severely depressed
- domestic violence witness
- parent served jail time
- being treated or judged unfairly due to race/ethnicity
- death of a parent

2022 Kentucky KIDS COUNT County Data Book, Kentucky Youth Advocates, Louisville, KY. Retrieved November 18, 2022 From <https://kyyouth.org/kentucky-kids-count/>
The state of Mental Health in America. Mental Health America. (n.d.). Retrieved November 9, 2021, From <https://mhanational.org/issues/state-mental-health-america>.
Centers for Disease Control and Prevention. (2022). Adverse Childhood Experiences (ACEs). Retrieved September 4, 2022 From <https://CDC.gov/violenceprevention/aces/index.html>
United Health Foundation. (2022). America's Health Rankings. Kentucky. Retrieved November 3, 2022 From <https://americashealthrankings.org/explore/state/KY>

Youth Well Being

The [Kentucky Department of Education](#), Office of Special Education and Early Learning collects data that is federally mandated by the Individuals with Disabilities Education Act (IDEA). IDEA ensures free appropriate public education to eligible children with disabilities and ensures special education and related services to those children. A report that utilized this data revealed that **16% of students** (age 3-21) in Kentucky has a disability. Below are % from public school systems by regions.

Kentucky Region	Percent of children age 3-21 with a disability
Kentucky Appalachian Region	20%
Kentucky Rural Region	18%
Kentucky Delta Region	16%
Kentucky Delta Region	16%
Kentucky	16%
U.S.	15%

[Source: Kentucky Department of Education](#)

[Kentucky Youth Advocates 2022 Data Book](#) reports that:

- **9%** of children were being raised by a relative (2019-2021)
- **53.7%** of children were in Foster Care (rate per 1,000 children ages (0-17)
- **33%** exited foster care to reunification with parent/primary caretaker
- Children that live in rural areas (**2.5%**) are most likely to have a complaint filed against them versus children that live in urban areas (**1.7%**)
- **13.7%** of Kentucky Youth were incarcerated in the juvenile justice system (rate per 1,000 children ages 10-17 / 2019-2021)

U.S. Department of Education. IDEA Section 618 Data Products: State Level Data Files. Retrieved from <https://www2.ed.gov/programs/osepidea/618-data/state-leveldatafiles/index.html#partmenu>
2022KentuckyKIDS COUNT County Data Book, Kentucky Youth Advocates, Louisville, KY. Retrieved November 18, 2022 From <https://kyyouth.org/kentucky-kids-count/>

Disabilities

A disability any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions).

According to the 2020 BRFSS survey report, **1,175,034** adults in Kentucky have a disability. This is equal to **33%** or 1 in 3 adults in Kentucky.

Social Security benefits are funded by a dedicated payroll tax paid by the worker and the worker's employer and by taxes paid by a self-employed person. Supplemental Security Income (SSI) benefits are intended to alleviate poverty and are means-tested. There is no insured status or prior work requirement for SSI, and the program is funded from general revenues rather than from a dedicated tax.

Social Security Disability contains **two** beneficiary classes - **Title II and Title XVI** beneficiaries:

- 1) **Title II** disabled worker average monthly benefit payment is \$1,166 per month - Title II beneficiaries must meet the following eligibility requirements:
 - Have worked long enough to become insured for Social Security benefits
 - Be younger than full retirement age
 - Have filed an application for benefits
 - Be blind or disabled per Social Security rules
 - Have served a 5-month waiting period (except for certain exemptions)

- 2) **Title XVI** average monthly benefit payment is \$578 per month - Title XVI beneficiaries must meet the following criteria:
 - Be blind or disabled per Social Security rules
 - Reside in one of the 50 States, the Northern Mariana Islands, or the District of Columbia, or be the child of a military parent assigned to permanent duty outside of the United States
 - Be a United States citizen or national who meets the applicable alien status or residency requirements
 - Have income and resources below specified limits
 - Have filed an application

NOTE: Title XVI beneficiaries are automatically enrolled in Kentucky's Medicaid Program - Kentucky's General Fund is directly impacted by Title XVI enrollment through its Medicaid expenditures. Title XVI Medicaid expenditures are split on an approximately 70/30 basis, with Kentucky picking up 30% of direct Title XVI Medicaid costs. According to the Centers for Disease Control (CDC), Disability Healthcare Costs in Kentucky are about \$14 Billion per year, or up to 41% of the state's healthcare spending.

Centers for Disease Control. (2022). Disability and health overview. Retrieved April 19, 2022 From <https://www.cdc.gov/ncbddd/disabilityandhealth/disability.html>

Social security Administration. (n.d.). Trends in the Social Security and Supplemental Security Income Disability. Retrieved April 19, 2022 From

https://www.ssa.gov/policy/docs/chartbooks/disability_trends/overview.html

Centers for Disease Control. (2022). Disability Healthcare Costs in Kentucky. Retrieved April 19, 2022 From <https://cdc.gov/ncbddd/disabilityandhealth/impact/impacts/kentucky.html>