

State Health Assessment

A Compilation on Health Status



Kentucky Public Health

Prevent. Promote. Protect.

**Kentucky Department for Public Health
Cabinet for Health and Family Services**

275 East Main Street

Frankfort, Kentucky 40621



2013

TABLE OF CONTENTS

Acknowledgements.....	3
Executive Summary.....	4
SECTION 1	
Introduction	8
Demographics	12
Socioeconomic Factors	15
Health Resource Availability	19
SECTION 2	
Quality of Life.....	22
Lifestyle Behaviors	25
Preventive Health Practices	31
Environmental Health.....	38
Social and Mental Health.....	43
Maternal and Child Health.....	46
Mortality	54
Morbidity	64
Injuries	72
Violence	76
Infectious Disease	78
Public Health System Assessment	93
SECTION 3	
Futures Group Recommendations.....	94
Friedell Committee Recommendations	96
Ten Winnable Battles (CDC Recommendations)	97
National Prevention Strategy	102
Healthy Kentuckians 2020 Plan	105
References	108
List of Figures and Tables.....	111

Acknowledgements

The following individuals contributed to this compilation. Others not mentioned here include all those public health professionals who developed reports and compiled data for the source documents and referenced materials that were used to compile this assessment.

Dr. Stephanie Mayfield, Commissioner	Joy Hoskins
Dr. William Hacker, Former Commissioner	Kathy Fowler
Dr. Steve Davis, Former Deputy Commissioner	Dr. Kraig Humbaugh
Amanda Gatewood	Laura Iwig
Amanda Wilburn	Linda Sims (Lincoln Trail DHD)
April Harris (Three Rivers DHD)	Liz Hoo
Becky Gillis	Mark Pyle (Christian CHD)
Bonita Bobo	Matthew Hill
Brandon Hurley	Melissa Gibson
Chang Lee	Paul Hopkins (Pike CHD)
Charles Kendell	Dr. Robert Brawley
Chris Workman	Rona Dawson
Dr. Christopher Stein, UK Prev. Med. Resident	Rosie Miklavcic
David Smith	Dr. Ruth Shepherd
Dennis Chaney (Barren River DHD)	Sandy Kelly
Dennis Peyton	Sara Robeson
Elaine Russell	Sarah Wilding
Ellen Kershaw (Alzheimer's Association of Greater Louisville)	Dr. Sarojini Kanotra
Dr. Fontaine Sands	Shelley Adams
Fran Hawkins	Sigga Jagne
Dr. Georgia Heise (Three Rivers DHD)	Sue Thomas-Cox
Gwen Cobb (KIPRC)	Teresa Goins
James Tolley (Pennyrile DHD)	Dr. Teri Wood
Jan Chamness (Montgomery CHD)	Dr. Terry Bunn (KIPRC)
Janie Cambron	T.J. Sugg
Jennye Grider	Dr. Tony Lobianco, Univ. of Kentucky
Jim Rousey	Dr. Torrie Harris
Jodi Smith	Dr. Tisha Johnson, UK Prev. Med. Resident
	Tracey Jewell
	Tricia Okeson
	Vivian Lasley-Bibbs

Special acknowledgement is made to the Center for Performance Management, Kentucky Department for Public Health for compiling this document.

EXECUTIVE SUMMARY

DEMOGRAPHIC SUMMARY

- Kentucky's population of 4,339,367 ranks 26th among the states.
- The population's distribution by gender and age groups are representative of the distribution of the U.S. population.
- Kentucky has a lower percentage of African Americans and Hispanic/Latinos than the U.S. population; however, the Hispanic/Latino population doubled in the last decade.
- Kentucky's population growth from 2000 to 2010 is lower than the U.S. population growth but exceeds the average growth among the seven states contiguous with Kentucky.

SOCIOECONOMIC SUMMARY

- Health status is greatly influenced by income and education.
- Children living in poverty have greater risk for school failure, poor health and higher rates of teenage pregnancy and childbearing.
- Men and women with a 4-year college degree can expect to live longer than men and women having only a high school diploma or GED.

HEALTH RESOURCE SUMMARY

- Less healthy counties have a higher percentage of citizens who are uninsured.
- Having insurance greatly improves access.
- Kentucky has a significant number of counties identified by Health Resources and Services Administration (HRSA) with shortage designations (health professional shortage areas and/or medically underserved areas).

QUALITY OF LIFE SUMMARY

- Citizens in the least healthy counties report a poorer quality of life.
- Citizens in the healthiest counties report fewer "poor physical" and fewer "poor mental" days.
- Health influences the quality of life.

LIFESTYLE BEHAVIORS SUMMARY

- Smoking, diet and physical inactivity account for one-third of all preventable deaths.
- Kentuckians still smoke too much, are too overweight or obese, and are too sedentary.
- Teen birth rates are lower in healthier counties and higher in less healthy counties.

PREVENTIVE HEALTH PRACTICES SUMMARY

- More Kentuckians need to be screened for breast cancer, cervical cancer, and colorectal cancer at recommended intervals.
- More Kentuckians need to have annual flu and recommended pneumonia vaccinations.
- More Kentuckians need to visit their dentist on an annual basis.

ENVIRONMENTAL HEALTH SUMMARY

- Air pollution is worse in large more urban areas.
- Education about infectious diseases is needed for staff who work at child care centers, swimming pools, confinement facilities, schools, and long term care facilities – places prone to have infectious disease outbreaks.
- Fast food restaurants and availability of healthy foods are noteworthy environmental issues.

SOCIAL AND MENTAL HEALTH SUMMARY

- Kentuckians report a higher number of “poor mental health days” than 48 other states.
- Kentucky and Mississippi (least healthy state in U.S.) have almost twice the number of adults with serious psychological distress than Vermont (the healthiest state in U.S.).
- Less healthy counties in Kentucky have greater percentages of adults who lack an adequate social support network.

MATERNAL AND CHILD HEALTH SUMMARY

- The percentage of pregnant women receiving early prenatal care appears to be decreasing.
- The percentage of women who report smoking during pregnancy ranges from 15 percent to 54 percent in Kentucky’s counties.
- Over the last 20 years, the percentages of preterm birth and low birthweight infants have been increasing.

MORTALITY SUMMARY

- Kentuckians die from the same leading causes of death as most of the nation.
- Kentuckians die at higher rates for many of the Ten Leading Causes of Death.
- Kentuckians living in healthier counties live longer than citizens living in less healthy counties.
- Disparities of race and ethnicity greatly increase infant mortality.

MORBIDITY SUMMARY

- Significant numbers of Kentuckians are burdened by serious chronic diseases.
- Kentucky has a higher percentage of adults with heart disease, diabetes, high blood pressure, asthma, disabilities and complete edentulism than most states.
- Kentucky has a higher rate of adults with risk factors for heart disease, including high blood pressure and high cholesterol.

INJURY SUMMARY

- Unintended injuries are a leading cause of death.
- Too many Kentuckians are dying in motor vehicle crashes.
- Seatbelts and child restraints are vitally important to preventing death in motor vehicle crashes.
- Driving and texting on cell phones present new challenges.
- Suicides and self-harm injuries have increased.

VIOLENCE SUMMARY

- Kentucky ranks low (good) with lower violent crime rates than most states.
- Kentucky's data for domestic violence did not change significantly between FY 09 and 10, but declined by 19 percent in FY 11.
- Kentucky has one of the highest rates of Child Maltreatment, exceeded only by New York and the District of Columbia.

INFECTIOUS DISEASE SUMMARY

- Kentucky infectious disease trends, as measured by the America's Health Rankings, have declined over the last twenty years. Kentucky compares better than 31 other states.
- TB cases have steadily trended downward over the last decade, and case rates per 100,000 population have remained lower than the U.S. rate: 1.6 in 2011 for KY compared to 3.4 for the U.S.
- Case rates for Hepatitis B and Hepatitis C have steadily trended upward since 2004.
- Chlamydia, Gonorrhea and Syphilis case rates have increased since 2004; however, those rates remain lower than the national rates.
- HIV diagnosis rates remain lower than U.S. rates: 8.7 for KY in 2008 compared to 22.8 for the U.S. AIDS diagnosis rates are 6.0 for KY in 2008 compared to 12.5 for the U.S.
- Vaccination coverage has steadily improved over the last decade. Comparison of state vaccination coverage for the full series for children 19-35 months (Series 4-3-1-3-3-1) shows Kentucky's percentage higher than Vermont, Mississippi and the national percentage.

PUBLIC HEALTH SYSTEM ASSESSMENT SUMMARY

- Kentucky Public Health performs Essential Public Health Service (EPHS) #2 (Diagnose and investigate) best, with a score of 88.5, out of 100.0.
- Kentucky Public Health performs EPHS #10 (Research/Innovate) least, with a score of 25.0, out of 100.0.
- Overall, only 10% of the Essential Service Scores fall in the Marginal Activity category; 90% of the activities are performed at the moderate, significant and optimal level. Only 15% of the Model Standard Scores are performed at the Marginal Activity category; 85% of the Model Standards are performed at the moderate, significant and optimal level.
- Improvements can be made in the performance of all 10EPHS.

THE FUTURES GROUP SUMMARY

- Kentuckians and their communities can become healthier.
- Kentucky public health must consider current forces of change impacting public health.
- Recommended top 5 priorities are access to care, obesity, infant mortality, tobacco (including programs to prevent abuse of Alcohol, Tobacco, and Other Drugs, like ATOD), and teen pregnancy.

FRIEDEL COMMITTEE SUMMARY

- Boards of Health must be engaged in improving the health of their communities.
- National performance standards and accreditation requirements are worthy for achievement at the state and local level.
- KDPH must develop state requirements and **accountability** for results/outcomes, use of resources, tracking health status indicators and relevant strategic planning, consistent with national performance standards and accreditation requirements.
- KDPH should encourage a local role for academic public health programs across Kentucky through discussions with the academic community.

TEN WINNABLE BATTLES SUMMARY

- The Director of CDC identified seven battle areas where success can be achieved in the U.S.
 - Food Safety
 - Healthcare-associated Infections

- HIV in the U.S.
- Motor Vehicle Injuries
- Nutrition, Physical Activity, and Obesity
- Teen Pregnancy
- Tobacco
- Remaining three battles are International efforts outside the U.S.

NATIONAL PREVENTION STRATEGY SUMMARY

- The National Prevention Strategy is the nation's first ever health improvement plan for nation.
- Four strategic directions include: healthy and safe community environments, clinical and community preventive services, empowered people, and elimination of health disparities.
- Seven priorities were identified: tobacco free living, preventing drug abuse and excessive alcohol use, healthy eating, active living, injury and violence free living, reproductive and sexual health, and mental and emotional well-being.

HEALTHY KENTUCKIANS 2020 SUMMARY

- The Kentucky Department for Public Health and key partners have identified 32 Healthy People 2020 topics to address.
- Goals, objectives and lead persons or agencies have been identified for most of the areas.

1

Introduction

For over 20 years, the fifty states have been ranked from the healthiest state to least healthy based on a set of social and health measures. For 2012, ranked Kentucky as the 44th healthiest state.⁴⁵ Figure 1 below shows that since 1990, Kentucky has remained toward the bottom (blue line), but the red linear trend line provides optimism that progress is being made albeit not as fast as public health officials would like.

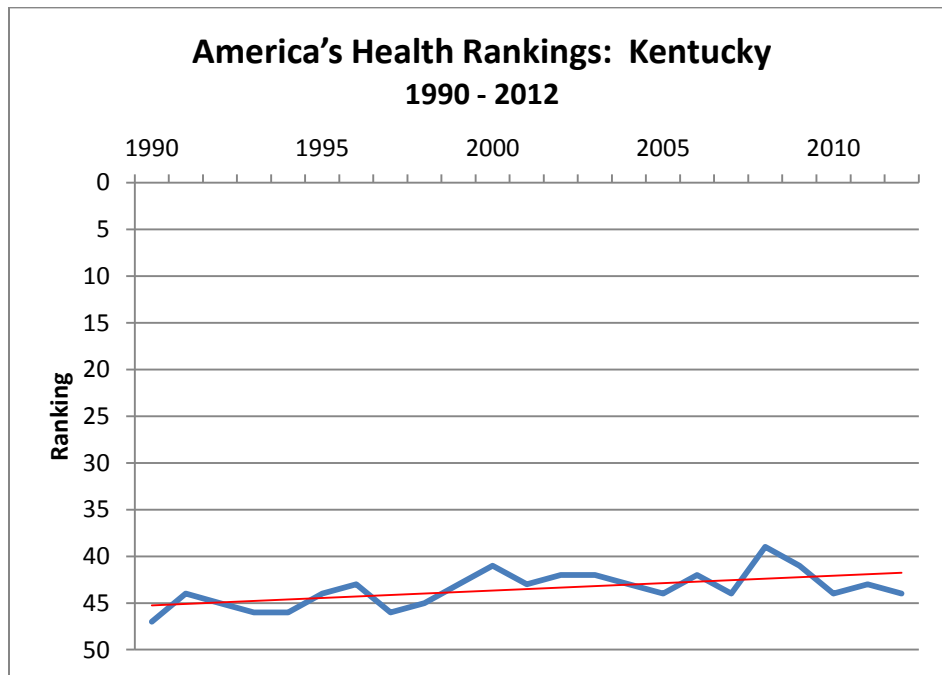


Figure 1. Source: [www.americashealthrankings.org/KY/2011, 2012](http://www.americashealthrankings.org/KY/2011,2012).

The **purpose** of this document, assuming the reader has an interest in the health status of all Kentuckians, is to provide the reader with data and details sufficient for the reader to assess the current health status of Kentuckians. As such the document provides a variety of data providing a macro view of factors influencing health or resulting from the health of Kentucky's over 4 million citizens. No one single factor is responsible for Kentucky's health status, although several factors have significant influence. If improving health status was simply the matter of improving one factor, health care professionals, public health officials, and other stakeholders could focus all resources toward that factor. Given the shrinking resources available, careful planning is needed to determine how to best allocate funds toward the multiple factors influencing Kentucky health status. There is a **need** for everyone interested in improving Kentucky's health status to find ways to make contributions – big or small. In a formal process, this document will help to develop a **State Health Improvement Plan (SHIP)**, which will consolidate goals and strategies leading to healthier Kentuckians and healthier communities.

This assessment utilizes several important sources of data. *American's Health Rankings* ranks states based on a set of health and socioeconomic measures. The latest *American's Health Rankings* were released in December, 2012. For 2012, Kentucky ranks 44th, down from 2011's 43rd rank and back to 2010's 44th rank. Vermont remains as the healthiest state, a position it has held for several years. For 2012, Mississippi remains the least healthy state, joined in 2012 by Louisiana. Many of the figures compare Kentucky to Vermont, Mississippi and Louisiana, since they represent the healthiest and least healthy states; these will be referred to as **reference states**. State rankings are determined by lifestyle behaviors, community and environment, public and health policies, and clinical care. Kentuckians have high prevalence of smoking, obesity, diabetes, heart disease, and cancers, which contribute to its lower ranking.

The U.S.'s over 3000 counties were rank ordered within their respective states by the Population Health Institute at the University of Wisconsin.⁵⁰ Rankings were based on three categories of measures: Health Outcomes (mortality & morbidity), Health Factors (health behaviors, clinical care, social & economic), and Policy (physical environmental). Several comparisons are made in this assessment using data compiled in these [County Health Rankings and Roadmaps](#). The latest data was released in March, 2013. Six Kentucky counties were chosen for comparison: Oldham, Boone, Fayette, Jefferson, Perry and Floyd. Oldham and Boone were ranked as #1 and #2, respectively; these are the two healthiest counties in Kentucky. Fayette and Jefferson were chosen as the two most urban counties; they ranked #8 and #30, respectively. Perry and Floyd represent the two least healthy counties in Kentucky, ranking #119 and #120, respectively. These six counties give the reader a better perspective of health status within Kentucky, knowing that there is variation in the range between healthy and least healthy counties. For some comparisons, this assessment includes the healthiest county in the healthiest state (Chittenden County, Vermont) and the least healthy county in each of the two least healthy states (Quitman County, Mississippi and East Carroll Parish, Louisiana). This assessment occasionally refers to the **reference counties**. The reference counties include Oldham, Boone, Fayette, Jefferson, Perry and Floyd; and periodically Chittenden County, Vermont, Quitman County, Mississippi and East Carroll Parish, Louisiana. It is important to note that this year's rankings included new metrics for some of the indicators, for example in the area of air quality, thus changing the rankings of some counties drastically, since this indicator was not included in previous years. This should be taken into account when comparing trends from year to year.

The [Community Health Status Indicator Reports](#) (CHSI) are compiled by the U.S. Department of Health & Human Services (HHS) and provide county level data for all counties.²⁵ Although CHSI does not rank counties, it provides a set of "Peer Counties" across the U.S. based on population composition and selected demographics.

Much of the data that is used in each of the above sources is gleaned from data developed by the Kentucky Department for Public Health and provided to the Centers for Disease Control and Prevention (CDC). The CDC compiles data from Vital Statistics (birth and death records) and from surveys of citizens, including the Behavioral Risk Factor Surveillance System (BRFSS).⁹ The BRFSS telephone survey has traditionally been completed by people using landlines. During the 2011 BRFSS, the methodology was updated to include cellular telephones due to the large number of households that contain only

cellular telephones and no landline telephones. Because of this change, estimates from the 2012 Edition onward cannot be compared to estimates from previous years. Shifts in estimates from previous years may be the results of the new methods, rather than measurable changes in the percentages.

For national perspective, some commentary and analysis are gleaned from [Health, United States, 2011](#), the annual report compiled by the Centers for Disease Control and Prevention (CDC)'s National Committee on Vital and Health Statistics.⁴ Other data is compiled from the U.S. Census.

Each source report determines what specific data is used, and some methodology involves averages over several years; differences in methodology accounts for most of the variances in specific measures from the various sources. National or U.S. Benchmarks were calculated by County Health Rankings and Roadmaps at the 90th percentile; that is, only 10 percent of U.S. counties are better.

KENTUCKY

Kentucky is in the Midwest but more often thought of as a southern state. Kentucky's area of 40,411 square miles includes some of the most diverse topography in the eastern half of the nation. The eastern part of the state, the Eastern Coal Field, is a rugged, mountainous area covered with forests and dissected by streams. In the gently rolling central part of the state, the Bluegrass Region to the north and the Mississippi Plateau to the south are separated by a chain of low, steep hills, the Knobs. The western part of the state, the Western Coal Field, is comprised of less rugged mountains enclosed by the Mississippi Plateau. The southwest corner of the state, the Jackson Purchase, is low flat plain. Kentucky is bordered by seven states: Across the Ohio River to the North are Illinois, Indiana and Ohio; across the Appalachian Mountains to the East are West Virginia and Virginia; Tennessee is to the South; and across the Mississippi River to the West is Missouri.

Kentucky is divided into 120 counties – everyone was to be within a day's mule-ride to and from his county seat. These counties receive public health services from 59 local health departments, configured as single-counties or districts.

Some of the data presentations in this assessment are stratified by Kentucky's Area Development Districts (ADD), using The [Kentucky Area Development District \(ADD\) Profiles: 2010 Behavioral Risk Factor Surveillance System \(BRFSS\)](#), published in December, 2011 and the [2011 Behavioral Risk Factor Surveillance System \(BRFSS\)](#), published in October, 2012. This helps to compare geographic sections of the state. There are fifteen ADDs, which were established to facilitate mutual cooperation between local governments and civic organizations as well as to facilitate economic development. The map at Figure 2 below shows these ADD Districts. In the tables that present ADD district data, the ADDs are listed generally from the west and moving eastward.



Figure 2. Kentucky's 15 Area Development Districts.

Table 1 lists each ADD District with its county composition.

Table 1. County Composition of Area Development Districts (ADD)	
ADD District	Counties
Purchase (PU) ADD	Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, McCracken, Marshall
Pennyrile (PR) ADD	Caldwell, Christian, Crittenden, Hopkins, Livingston, Lyon, Muhlenberg, Todd, Trigg
Green River (GR) ADD	Daviess, Hancock, Henderson, McLean, Ohio, Union, Webster
Barren River (BR) ADD	Allen, Barren, Butler, Edmonson, Hart, Logan, Metcalfe, Monroe, Simpson, Warren
Lincoln Trail (LT) ADD	Breckinridge, Grayson, Hardin, Larue, Marion, Meade, Nelson, Washington
KIPDA (KI) ADD	Bullitt, Henry, Jefferson , Oldham , Shelby, Spencer, Trimble
Northern Kentucky (NK) ADD	Boone , Campbell, Carroll, Gallatin, Grant, Kenton, Owen, Pendleton
Bluegrass (BG) ADD	Anderson, Bourbon, Boyle, Clark, Estill, Fayette, Franklin, Garrard, Harrison, Jessamine, Lincoln, Madison, Mercer, Nicholas, Powell, Scott, Woodford
Lake Cumberland (LC) ADD	Adair, Casey, Clinton, Cumberland, Green, McCreary, Pulaski, Russell, Taylor, Wayne
Cumberland Valley (CV) ADD	Bell, Clay, Harlan, Jackson, Knox, Laurel, Rockcastle, Whitley
Kentucky River (KR) ADD	Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry , Wolfe
Big Sandy (BS) ADD	Floyd , Johnson, Magoffin, Martin, Pike
Gateway (GW) ADD	Bath, Menifee, Montgomery, Morgan, Rowan
Buffalo Trace (BT) ADD	Bracken, Fleming, Lewis, Mason, Robertson
FIVCO (FI) ADD	Boyd, Carter, Elliott, Greenup, Lawrence
Source: KDPH - Kentucky Area Development District Profiles, 2010 Behavioral Risk Factor Surveillance System (BRFSS). Note: Reference counties are in BOLD and underlined .	

DEMOGRAPHICS

According to the Official 2010 Census, Kentucky's population was 4,339,367. Kentucky's growth since the 2000 census equaled 7.4 percent, less than the overall U.S. population growth of 9.7 percent for the same time period.

Table 2. Population and Growth		
	Kentucky	U.S. Population
2010 Census	4,339,367	308,745,538
2000 Census	4,041,769	281,424,602
% Growth	7.4%	9.7%
Source: U.S. Census Data for 2010.		

Kentucky borders seven states: Tennessee (south); Missouri (west); Illinois, Indiana, and Ohio (north); and West Virginia and Virginia (east). Kentucky's growth exceeded the average for this eight state area. Individually, only Virginia and Tennessee had population growths greater during the first decade of the 21st Century.

Table 3. Comparison with Bordering States			
	2010 Census	2000 Census	% Growth
Illinois	12,869,257	12,830,632	3.3%
Ohio	11,536,504	11,353,140	1.6%
Virginia	8,001,024	7,078,515	13.0%
Indiana	6,516,922	6,483,802	6.6%
Tennessee	6,346,105	5,689,283	11.5%
Missouri	5,988,927	5,595,211	7.0%
Kentucky	4,339,367	4,041,769	7.4%
West Virginia	1,852,994	1,808,344	2.5%
Totals	57,379,355	54,066,040	6.1%
Source: U.S. Census Data for 2010.			

Kentucky’s population can be viewed through a number of important segments. The percentage of females in both Kentucky and the United States are slightly over half.

Table 4. Comparison of Gender Distribution		
Gender	Kentucky	U.S. Population
Female	50.8%	50.8%
Male	49.2%	49.2%
	100.0%	100.0%
Source: U.S. Census Data for 2010.		

Comparing Kentucky’s population by age categories to the U.S. population, there are only slight variations.

Table 5. Population Segmented by Age		
	Kentucky	U.S. Population
Ages: Under 5	6.5%	6.5%
Ages: 5 - 9 years	6.5%	6.6%
Ages: 10 - 19 years	13.4%	13.8%
Ages: 20 - 44 years	33.0%	33.6%
Ages: 45 - 64 years	27.2%	26.4%
Ages: Over 65 years	13.3%	13.0%
	100.0%	100.0%
Source: U.S. Census Data for 2010.		

Kentucky has a higher percentage of White persons and fewer Black or African-Americans and Hispanic/Latino than found in the general U.S. population. Although the percentage is small, the Hispanic/Latino population doubled from 1.5 percent in 2000 to 3.1 percent in 2010.⁴⁶

Table 6. Population Segmented by Race and Ethnicity		
Race or Ethnicity	Kentucky	U.S. Population
White	87.8%	72.4%
Black	7.8%	12.6%
Asia, Hawaii, Pacific	1.2%	5.0%
2 or more races	1.7%	2.9%
Hispanic/Latino origin	3.1%	16.3%
White not Hispanic	86.3%	63.7%
Source: U.S. Census Data for 2010.		

LANGUAGE

According to the 2011 [American Community Survey](#), only 4.8 percent of Kentucky residents speak a language other than English at home.⁴⁶ This compares to 20.8 percent of U.S. residents who speak a language other than English at home.⁴⁶ The percentage of Kentuckians speaking a language other than English increased from 3.9 percent in the 2000 Census. Other languages spoken include Spanish (1.9 percent), German (0.5 percent), French (0.3 percent), Chinese (0.1 percent), Japanese (0.1 percent), Korean(0.1 percent), Other West Germanic languages (0.1 percent), Arabic (0.1 percent), Serbo-Croatian (0.1 percent), Vietnamese (0.1 percent), Russian (0.1 percent), and Tagalog (0.1 percent).

SOCIOECONOMIC FACTORS

Several socioeconomic factors are associated with health status. Income and education are factors that have a direct correlation with health status. Income influences access to health care, not only through having health insurance, but also available funds for co-pays and deductibles. Higher level incomes are associated with higher levels of education.

EDUCATION

According to the CDC, in 2006 men and women having a 4-year live longer than those with only a high school diploma.⁵ At age 25, men with a 4-year college degree or higher can expect to live to age 81, five years longer than men with only a high school diploma or GED. Women with a 4-year college degree can expect to live three years longer than women with only a high school diploma. Compared to those who do not have a high school diploma, men and women with the 4-year college degree can expect to live nine years and eight years longer, respectively.⁴ Education impacts health status and life expectancy.

Table 7 below compares the education level of Kentuckians to the national level.

Table 7. Education Level		
	Kentucky	United States
High School Diploma/GED	81%	85%
Some College	55%	68%

Table 7. Source: U.S. Census Data for 2010.

Education level varies among Kentucky's 120 counties. Figure 3 compares the education levels between Kentucky's two healthiest counties (Oldham & Boone), Kentucky's two least healthy counties (Perry and Floyd), and Kentucky's two most populous/urban counties (Fayette and Jefferson). The healthiest county in the healthiest state (Chittenden County, Vermont) and the least healthy counties in the least healthy states (Quitman County, Mississippi and East Carroll, Louisiana) are added for further comparison.

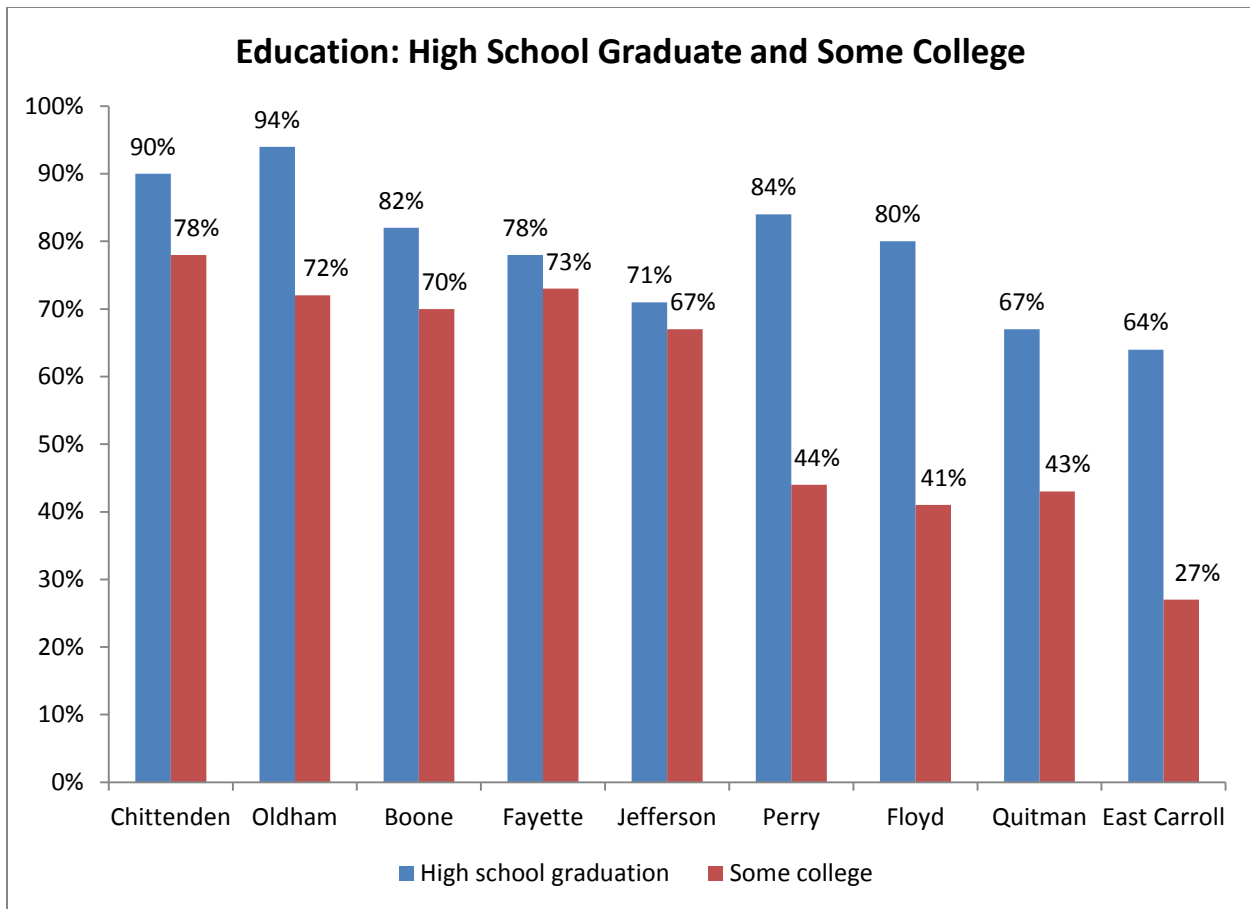


Figure 3. Source: U.S Census, 2013.

High school graduation and GED rates increased in the period between 2000 and 2010. Kentucky rates increased from 74.1 % in 2000 to 81.0% in 2010, an increase of 6.9%. During the same time period, the U.S. rate increased by 4.6%, increasing from 80.4% in 2000 to 85.0% in 2010.

INCOME AND POVERTY

Incomes are generally higher in healthier states and healthier counties. For 2011, the median U.S. household income was \$50,502, with all the states ranging \$36,963 (MS) and \$70,075 (MD). Kentucky's medium income for 2011 was \$41,141, with the counties ranging between \$21,865 (Owsley) and \$80,872 (Oldham). Figure 4 compares the medium household income (in thousands of dollars) for the reference counties.

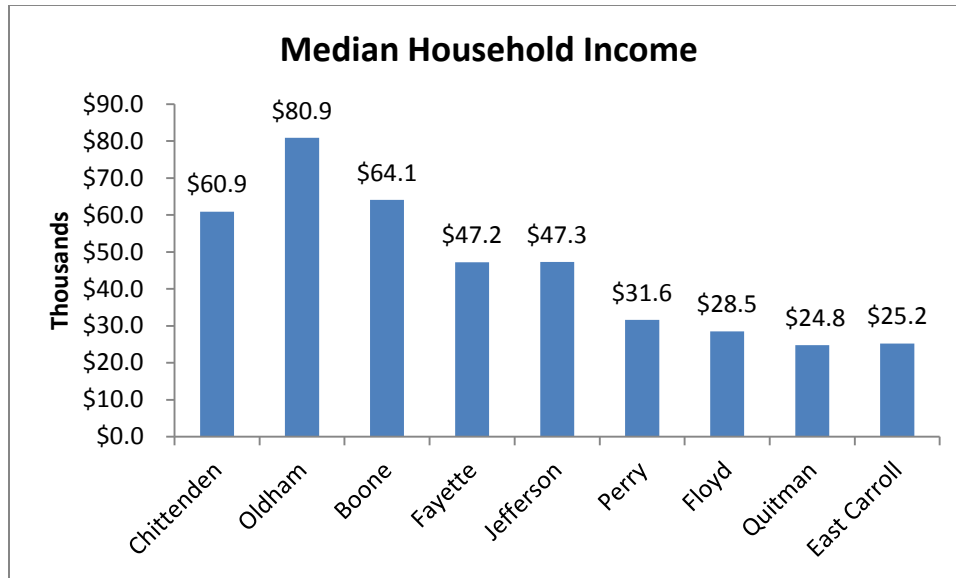


Figure 4. Source: US Census, Small Area Income & Poverty Estimates, 2011.

Citizens living in poverty are shown in Figure 5 below for the reference counties. Kentucky has 19.1 percent of its population living in poverty, compared to 15.9 percent overall in the U.S. Rates for Vermont, Mississippi and Louisiana are 11.9 percent, 22.8 percent, and 20.5 percent, respectively.

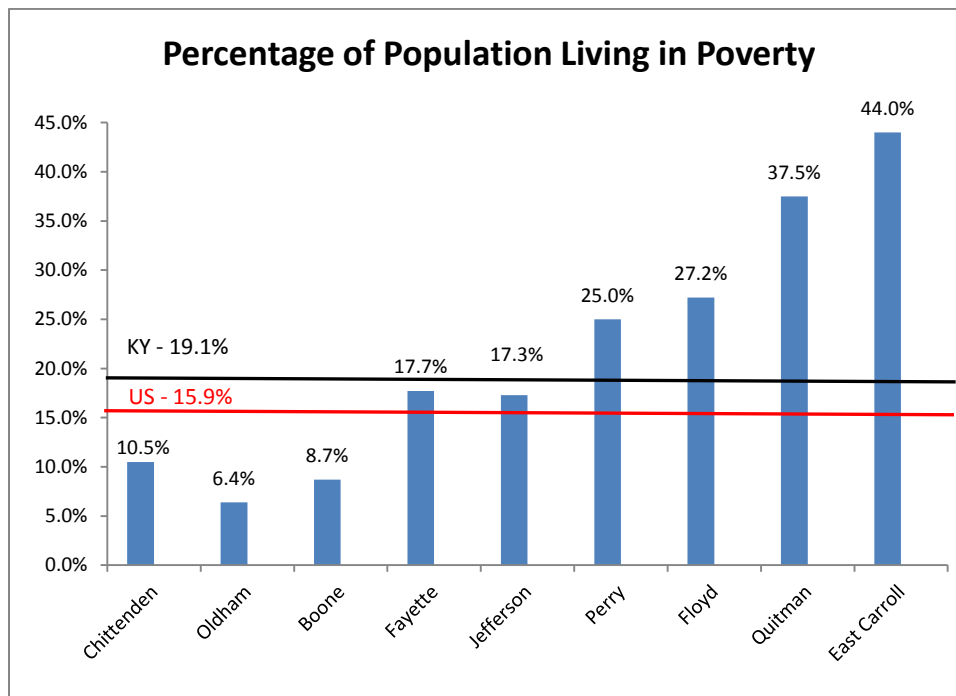


Figure 5. Source: US Census, Small Area Income & Poverty Estimates, 2011.

According to the CDC publication, [Health United States](#) from 2011, “Growing up in poverty raises children’s risks for school failure, poor health, and teen pregnancy and childbearing. In all racial and ethnic groups, children are more likely to be poor than adults.”⁴ For 2011, 27.0 percent of Kentucky’s children were living in poverty. Rates for Vermont, Mississippi and Louisiana were 16 percent, 32 percent, and 29 percent, respectively. Figure 6 below compares children living in poverty in Kentucky’s healthiest, least healthy and most urban counties. Chittenden County, Vermont and Quitman County, Mississippi are included.

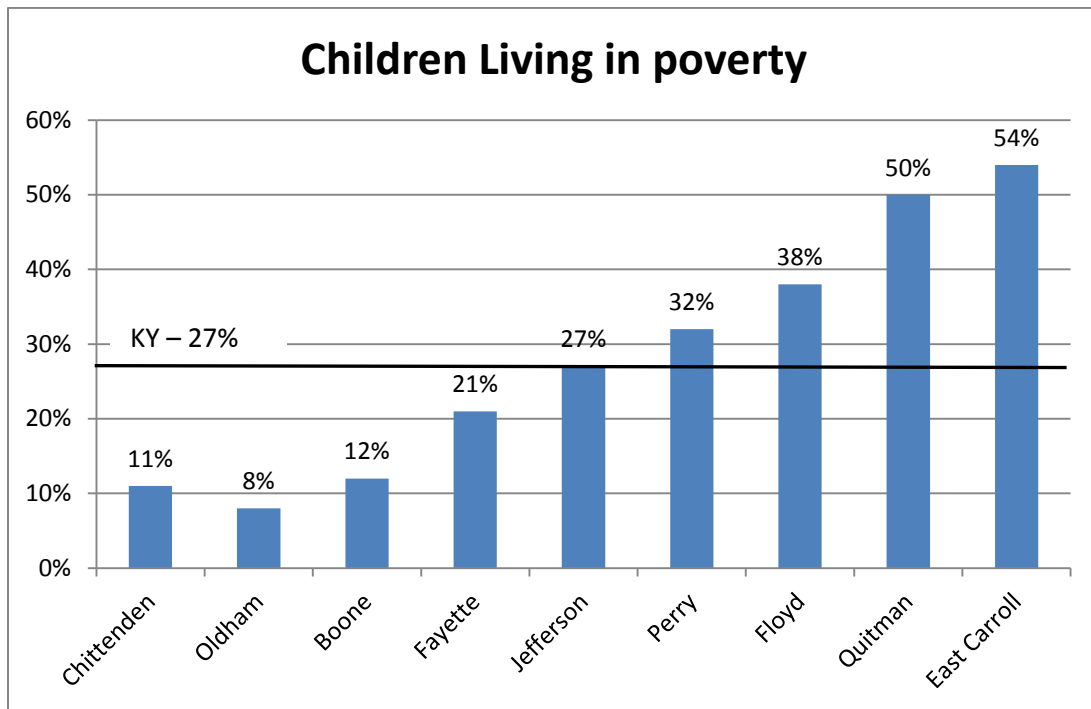


Figure 6. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.

As the U.S. economy slowed into a recession, poverty levels increased in most states and counties across the U.S. As the economy recovers, employment levels should improve. According the U.S. Department for Labor, Kentucky’s unemployment rate decreased from 9.6 percent in May, 2011 to 8.2 percent in May, 2012, and to 8.0 percent at the end of 2012.⁴⁹ During the same period, the U.S. unemployment rate decreased from 9.0 percent to 8.2 percent in May, 2012, and to 7.8 percent by the end of 2012.

HEALTH RESOURCE AVAILABILITY

Access to care, health insurance coverage, and availability of health care all impact health status. Kentucky has concentrated health care resources in Lexington and Louisville, the state’s largest cities; however, access to health resources is more difficult for those who are uninsured or underinsured. Health insurance improves access to health care, but does not guarantee access because of co-pays, deductibles, and other barriers.⁴

UNINSURED KENTUCKIANS

Adults living below the poverty line are more likely to be uninsured. The 2012 HHS Poverty Guidelines define poverty level for a family of four whose household income is \$23,050 or less. According to the CDC, “adults living at less than 200% of the poverty line were five to seven times as likely, and those living at 200-399% of the poverty level were about three times as likely, to be uninsured, compared with adults living at 400% or more of the poverty level.”⁴ Table 8 below compares the percent of uninsured children and adults between Kentucky and the U.S. The percentage of total population of uninsured adults is slightly lower in Kentucky (14.5 %) than the U.S. (15.1%). For each of the age segments, the percentages are lower in Kentucky. Kentucky has campaigned to enroll more eligible children into its children's health insurance program, KCHIP, which may be reflected in those percentages.

Table 8. Kentucky Uninsured				
	Kentucky #	Kentucky %	U.S. #	U.S. %
Children (<18)	64,444	6.1%	5,527,657	7.5%
Adults (18-64)	553,972	20.6%	40,455,941	21.0%
Adults (65 & Older)	2,042	0.4%	391,941	1.0%
Population Totals	620,458	14.5%	46,375,539	15.1%
Source: U.S. Census Bureau, 2011 American Community Survey Note: Percentages are based on total population figures not shown.				

According to the CDC, “between 2000 and 2010, uninsured adults were much more likely than insured adults to have delayed seeking or not received needed medical care due to cost.”⁴ Kentucky’s healthiest counties have less uninsured citizens under age 65 than its least healthy counties. Figure 7 compares the percentage of uninsured Kentuckians under age 65 living in the reference counties.

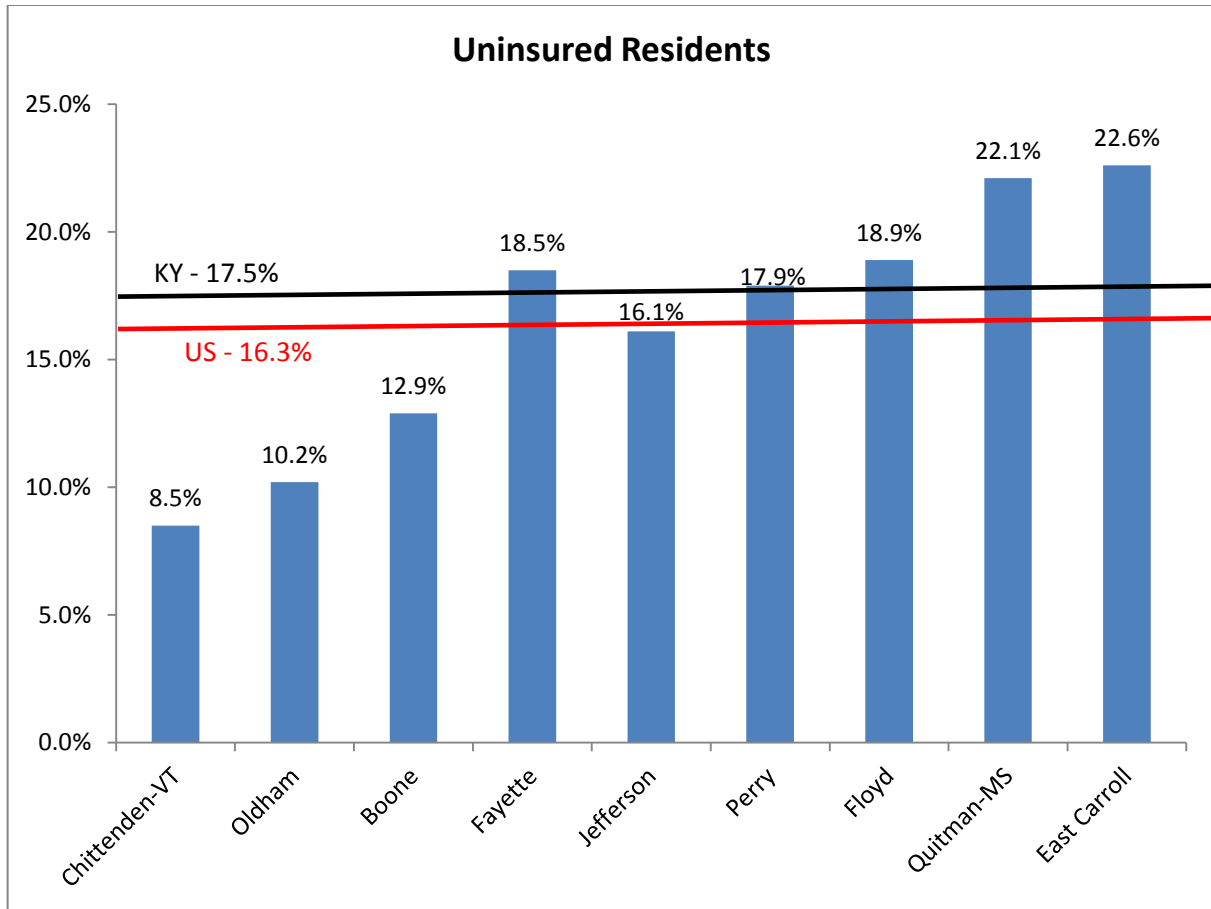


Figure 7. Source: US Census Bureau, Small Area Health Insurance Estimates, 2011.

PRIMARY CARE PHYSICIANS

One measure of health care resources available to Kentuckians is the ratio of population to primary care physicians (PCP). This is calculated by taking the population of the state or a county and dividing it by the number of PCPs practicing in that state or county. Figure 8 compares this ratio for the referenced counties. This data does not account for proximity to resources in nearby counties. Oldham and Boone Counties are both located within the metropolitan areas of Louisville and Cincinnati, respectively; citizens of these counties have access to the primary care physicians of their respective metropolitan areas.

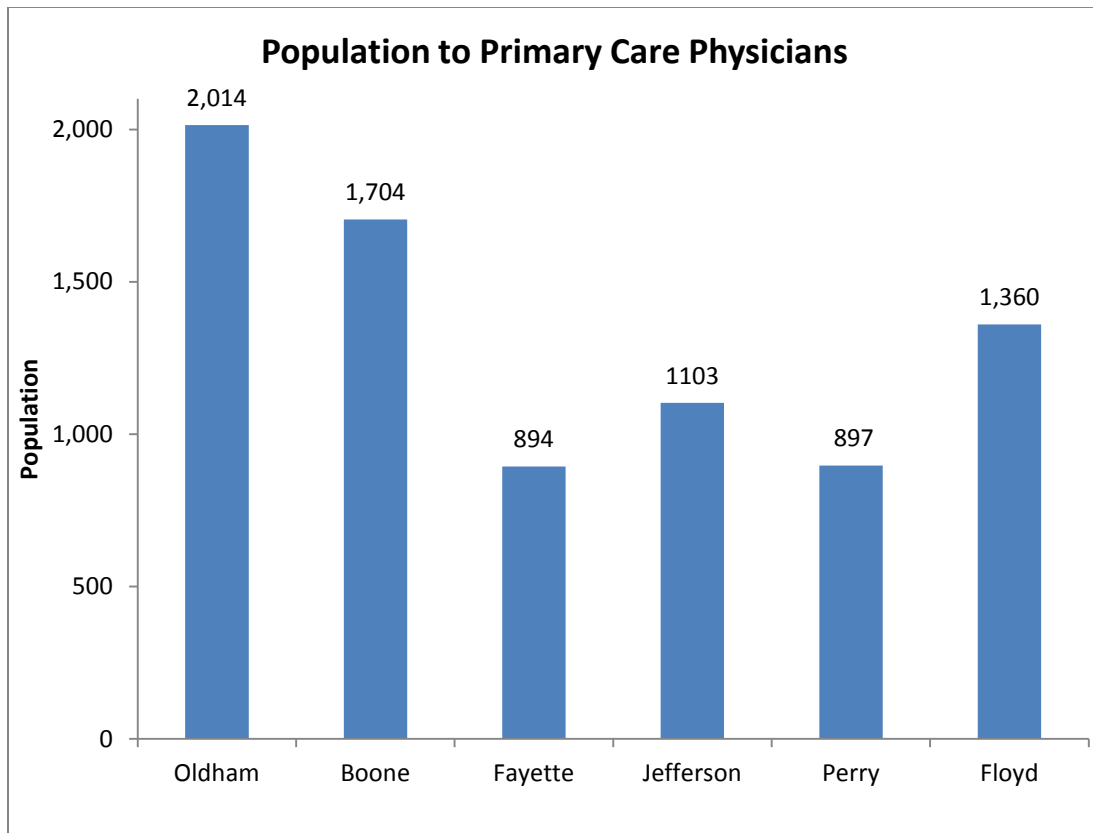


Figure 8. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.

Data compiled by CDC in the Behavioral Risk Factor Surveillance System (BRFSS) indicated that in 2010, 83.3 percent of Kentucky adults surveyed stated they had a primary care physician. This compared to 81.7 percent for the entire country. A separate BRFSS question addressed ability to see a doctor when needed. The percentages for Kentucky and the U.S. were 17.2 percent and 14.7 percent, respectively.

The Health Resources and Services Administration (HRSA) specified all or portions of 87 of Kentucky's 120 counties (72.5 %) with shortage designations (health professional shortage areas and/or medically underserved areas).²⁶

2

QUALITY OF LIFE

Health status cannot be fully measured with data of morbidity and mortality, chronic disease rates, environmental factors, maternal and child measures, mental and social health injuries and infectious disease rates. According to the CDC, "the concept of health-related quality of life and its determinants have evolved... to encompass those aspects of overall quality of life that can be clearly shown to affect health - either... physical or mental."²⁰ While health care has sought to save lives and lengthen its quantity, the following measures are examining improvements to the quality of life.

The Behavioral Risk Factor Surveillance System (BRFSS) surveys citizens about many aspects of their health. The BRFSS collects uniform, state-specific data on preventive health practices and risk behaviors that are linked to chronic diseases, injuries, and preventable infectious diseases that affect the adult population. Three BRFSS questions addressed in this section relate to quality of life information.

The first question addressed in the first chart asks, "In general would you say that your health is excellent, very good, good, fair, or poor?" Figure 9 below depicts the percentage in each of our reference counties who responded either "fair" or "poor."

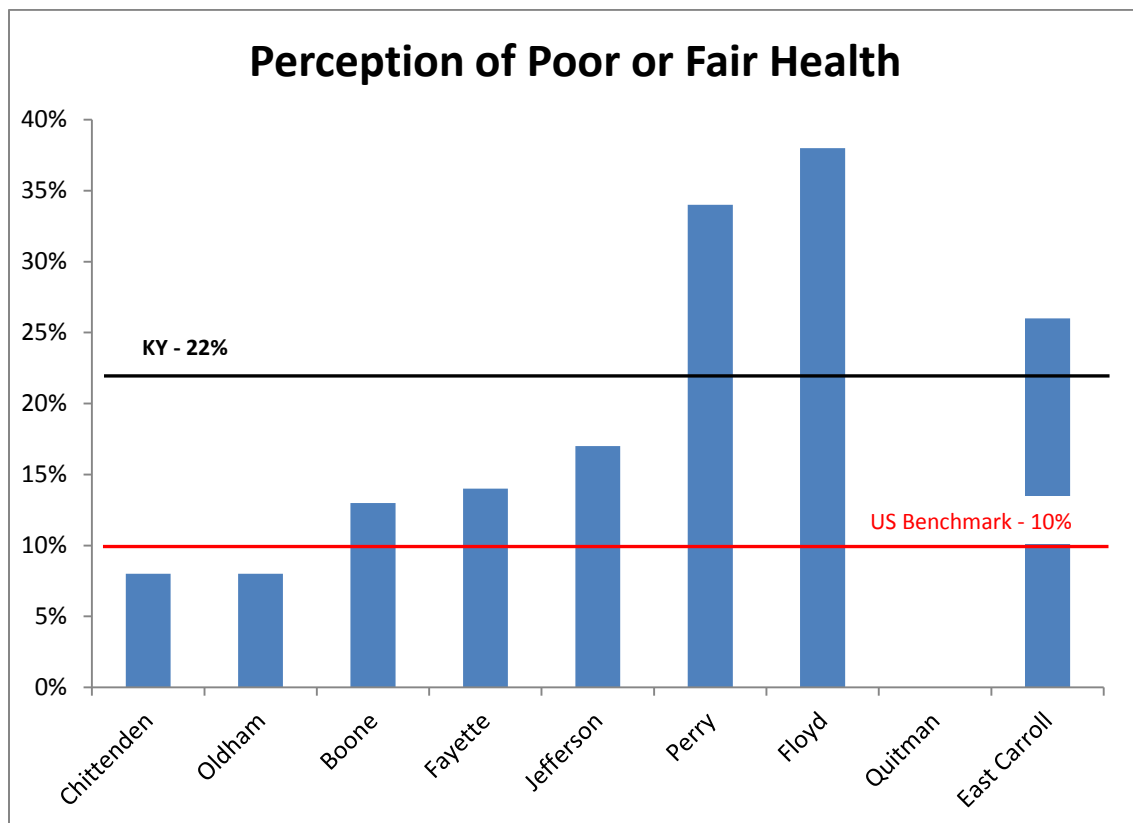


Figure 9. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.
NOTE: Data was not available for Quitman County, MS.

BRFSS respondents were also asked, in thinking about the last 30 day period, about the number of days their physical health and, separately, their mental health was “not good”. Figures 10 and 11 on the next page depict the responses for our reference counties.

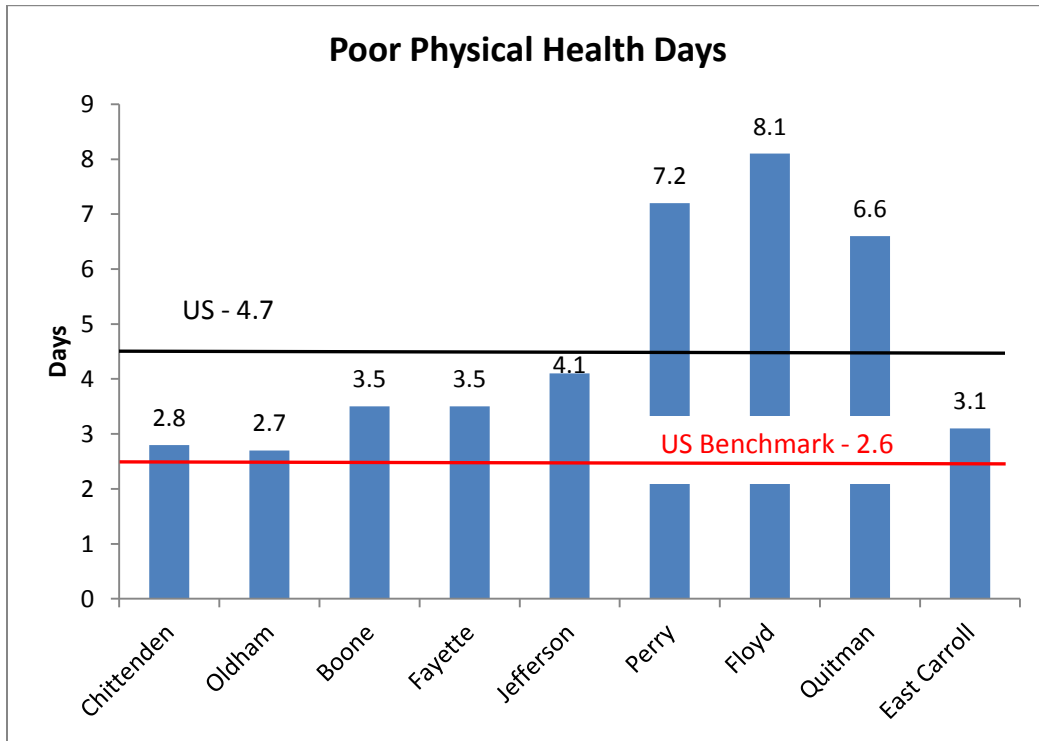


Figure 10. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.

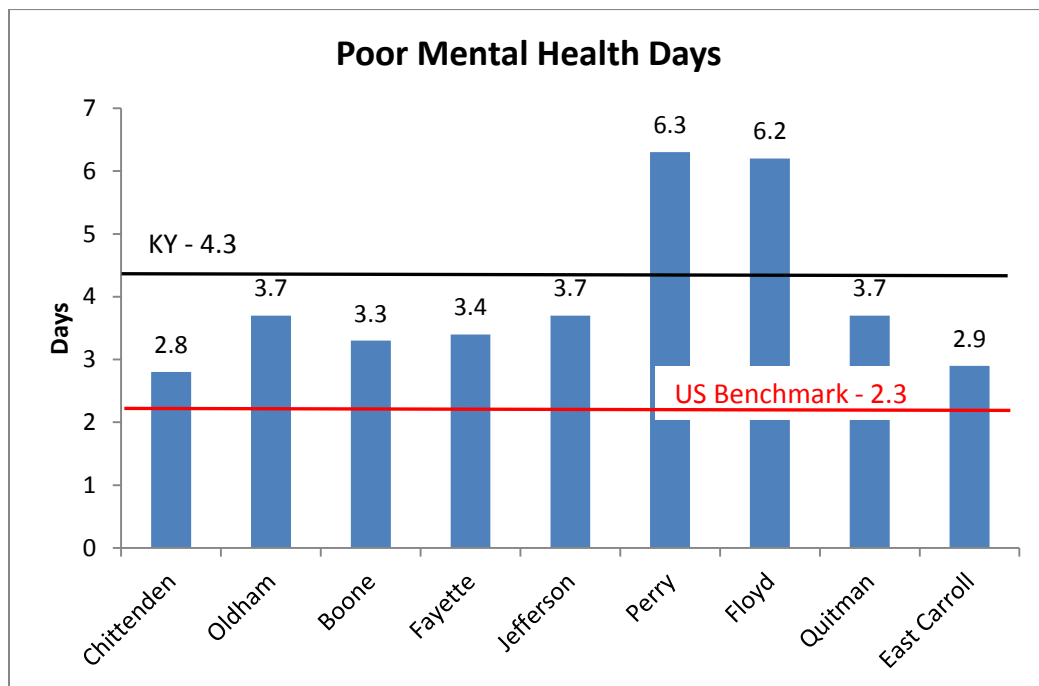


Figure 11. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.

Although health is the primary focus of this assessment, quality of life has many dimensions including jobs, schools, housing, neighborhoods, personal sense of safety, culture, spirituality and other complex aspects. The Commonwealth Index, a comprehensive examination of citizen quality of life, compares Kentucky to 16 peer states and to all 50 states. Figure 12 below shows a composite of 32 different factors segregated into a Communities Sub-index, Education Sub-index, Economy Sub-index, Environment Sub-index and a Government Sub-index. Among peer states, Kentucky ranged from 8 to 11 in rank from best to worst among the 16 states from 1990 to 2003. Among all 50 states, Kentucky ranged from 40th to 45th for the same time period.⁵¹

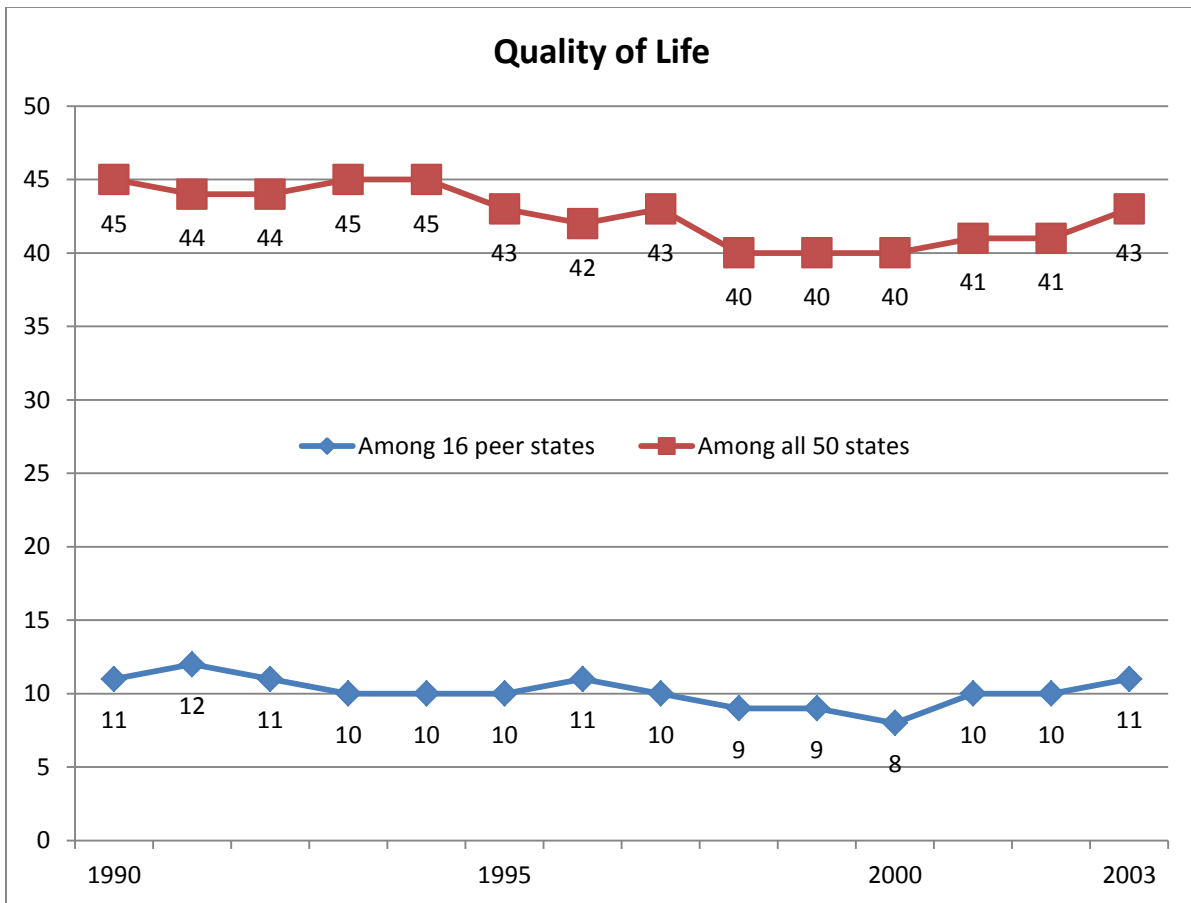


Figure 12. Source: Watts, A., "The State of the Commonwealth Index", 2003.

LIFESTYLE BEHAVIORS

Health status is influenced by lifestyle behaviors. Behaviors that are considered risky adversely impact health, such as smoking, excessive use of alcohol, or abuse of drugs.

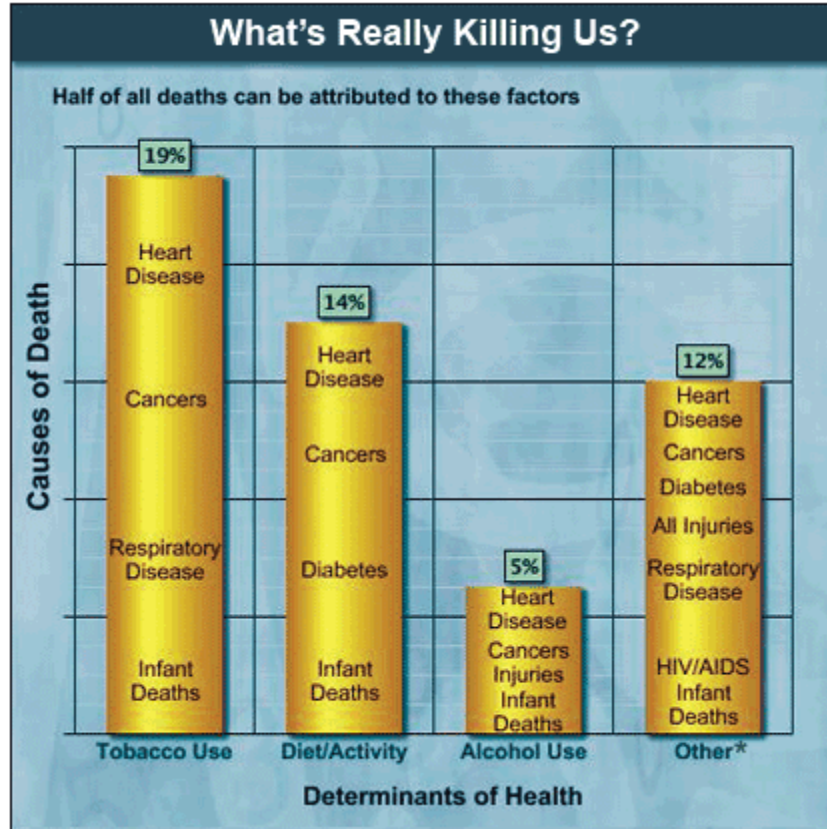


Figure 13. Source: HHS – communityhealth.hhs.gov, 2009.

TOBACCO USE

Tobacco use, primarily cigarette smoking, continues to be the leading cause of preventable disease, disability, and death in the United States.⁴ As shown in 'What's Really Killing Us?', Figure 13 above, tobacco use, predominately smoking, accounts for more than 19 percent of preventable deaths due to heart disease, cancers, respiratory disease, and infant deaths.²⁵ The number of Kentucky adults who smoke has been in decline over the last twenty years, following the same trend as the U.S. (see Figure 13). Despite this trend, Kentucky ranks 50th among states for 2012, up from 49th in 2011. Over the last 20 years, about 7.3% more Kentuckians smoke than the U.S. as a whole. The percentage of adult smokers varies across Kentucky. Kentucky's healthiest county has a percentage of adult smokers that is 7 percent higher than Chittenden County, Vermont. Kentucky's least healthy county has a percentage of

adult smokers more than double the number for the U.S. as a whole. Kentucky youth who smoke at least one cigarette per day exceed U.S. youth smokers by 6 percent (24.1% compared to 18.1%). Figure 14 below provides a comparison of adult smokers Kentucky's healthiest counties, most urban counties, and least healthy counties.

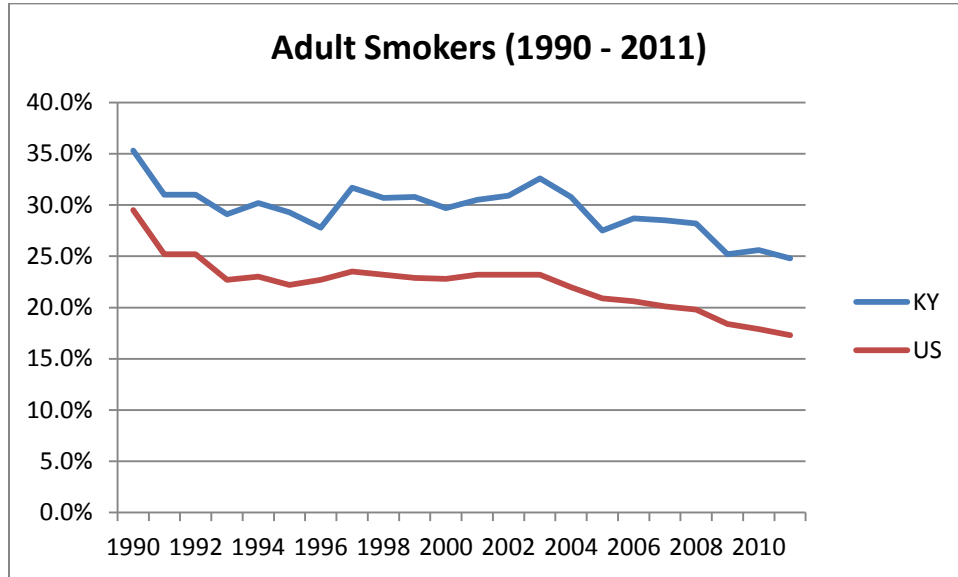


Figure 14. Source: www.americashealthrankings.org, 2012.

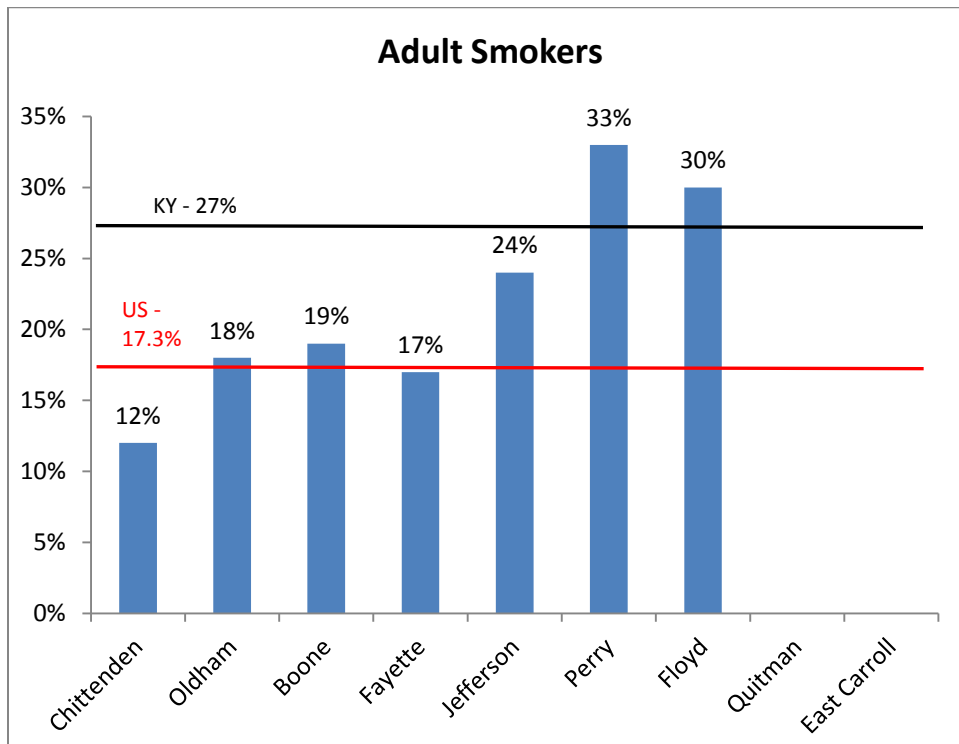


Figure 15. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013. No source data available on Quitman County or East Carroll Parish.

DIET, PHYSICAL ACTIVITY AND OBESITY

Also noted in 'What's Really Killing Us?' (see Figure 13), about 14 percent of preventable deaths are attributed to poor diets and [lack of] physical activity. Obesity is associated with increased risk of heart disease, stroke, some cancers, diabetes, osteoarthritis, and disability.⁴ Obesity is defined as having a body mass index of 30.0 or higher. BMI does not measure body fat directly, but its calculation using both weight and height ($\text{weight} \div \text{height}^2$) correlates to direct measures of body fat. Obesity is associated with excess mortality and morbidity in childhood and adulthood.

Obesity in the United States has been steadily increasing over the last 20 years (Figure 16). In 1990, 11.6 percent of Americans were obese; that number increased to 27.6 percent in 2011. In 1990, 12.6 percent of Kentuckians were obese; that number increased to 31.8 percent in 2011. From 1990 to 2011, obesity grew an average of 5 percent each year in Kentucky compared to 4 percent each year for the nation.

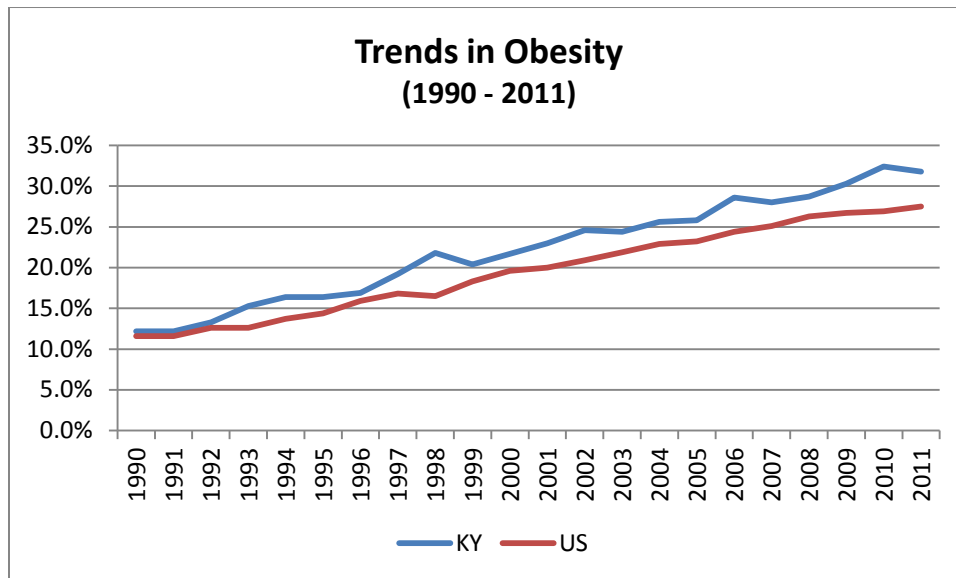


Figure 16. Source: America's Health Ranking, 2012.

For 2012, 27.8 of Americans were obese; 30.4 percent of Kentuckians were obese. Colorado had the least percentage of obese citizens with 20.7 percent, and Mississippi had the greatest percentage with 34.9 percent.

Figures 17 and 18 compare Kentucky's obesity percentage to the reference states and to the reference counties, respectively.

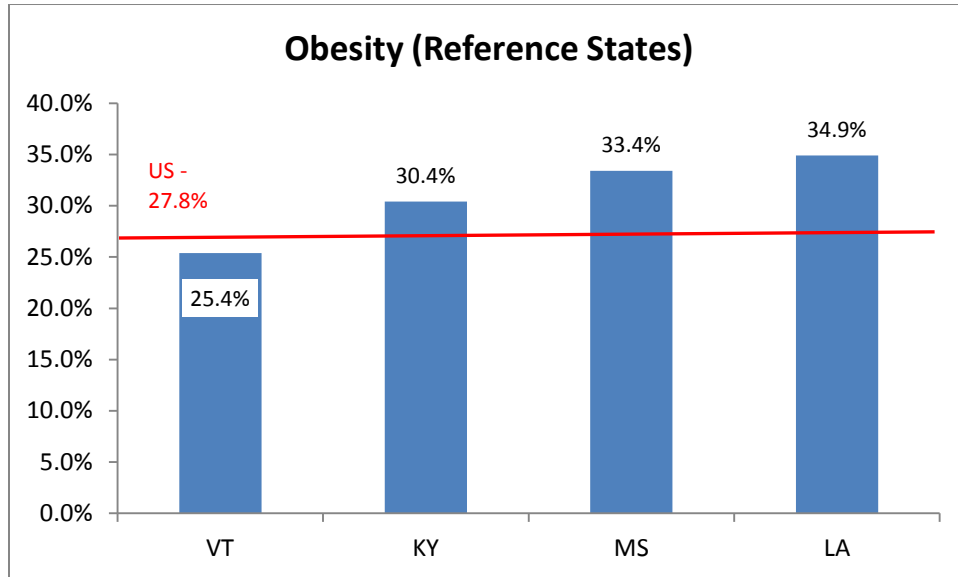


Figure 17. Source: America's Health Rankings, 2013.

Over two-thirds of Kentuckians are either overweight or obese. As seen in Figure 18 below, obesity appears to be a universal problem in Kentucky.

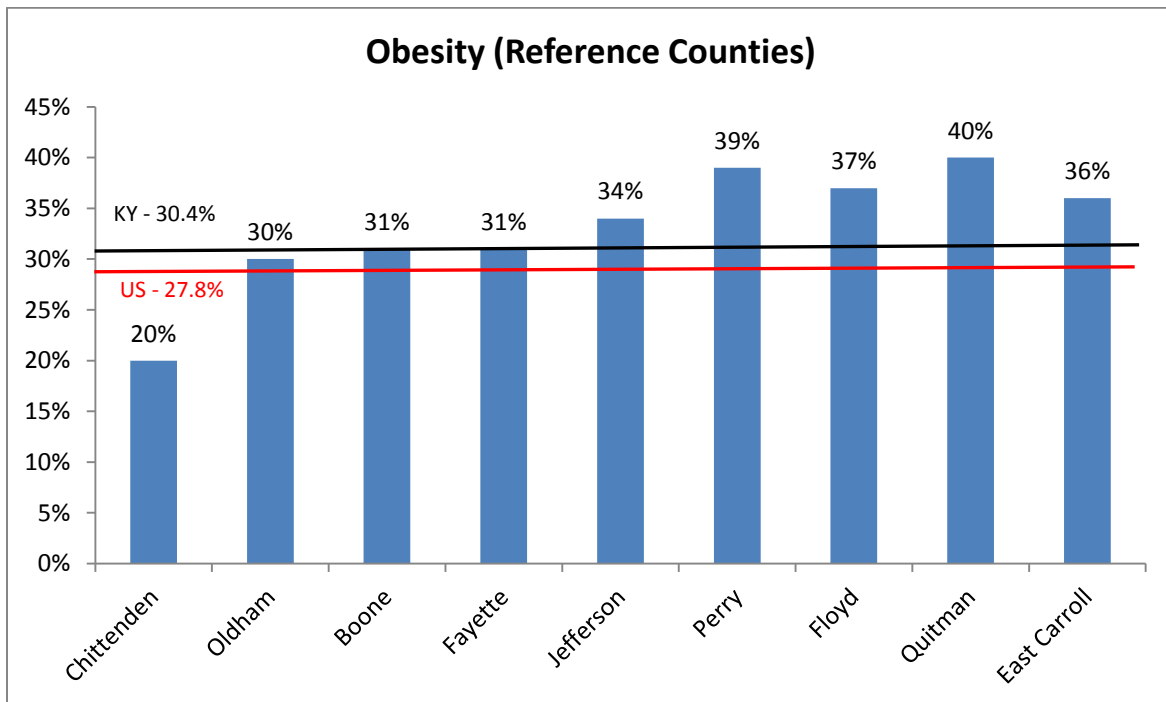


Figure 18. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.

Closely associated with obesity is physical inactivity. Figure 19 below depicts the differences between the healthiest counties and the least healthy counties.

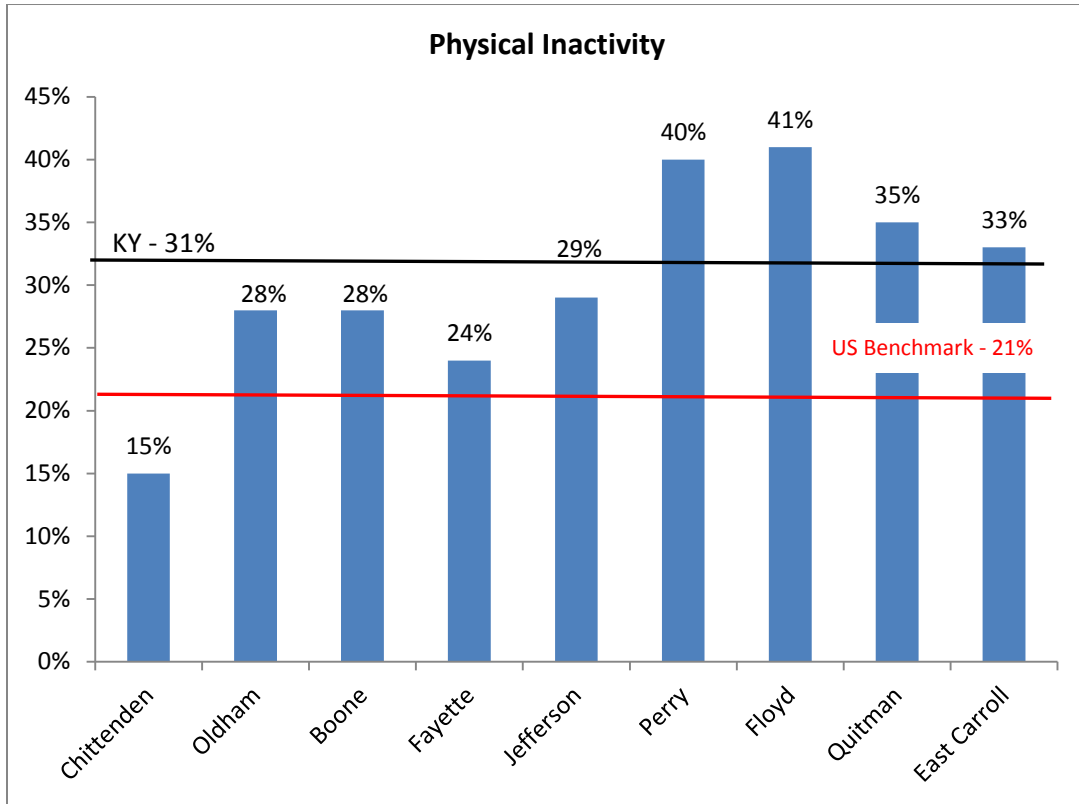


Figure 19. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.

The impact of growing obesity on diabetes can be seen in the following trend lines (Figure 20). The green line at the top starting in 1997 and declining is the percent of Kentuckians who do not exercise regularly. This trend seems to have stabilized at around 30 percent, but continued improvement is needed. The blue line in the center and increasing all the way across the graph details the steady rise in obesity among Kentuckians. Running almost parallel (red line) to the increase in obesity is the steady increase in percentage of Kentuckians diagnosed with diabetes.

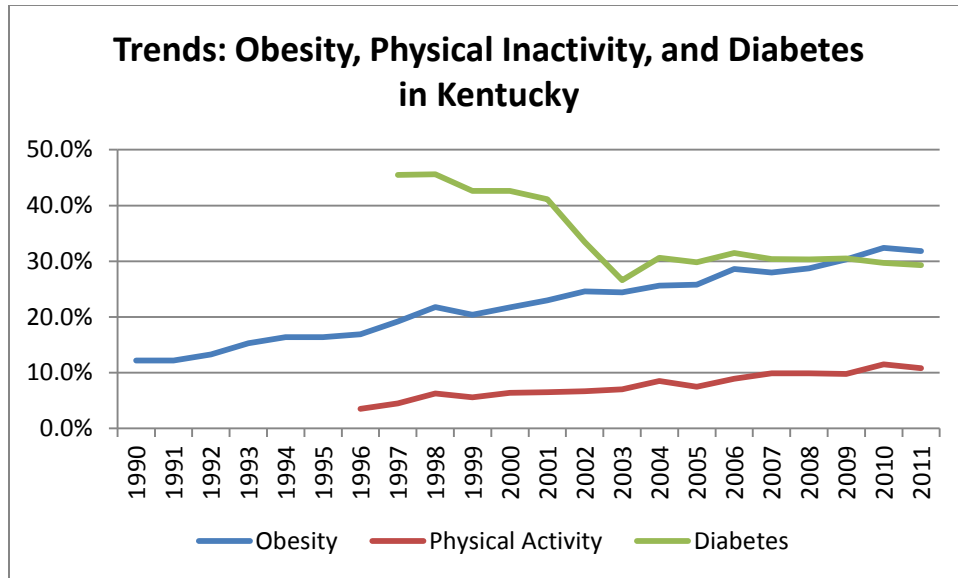


Figure 20. Source: www.americashealthrankings.org, 2012.

EXCESSIVE ALCOHOL CONSUMPTION

Figure 21 below compares excessive drinking among the reference counties.

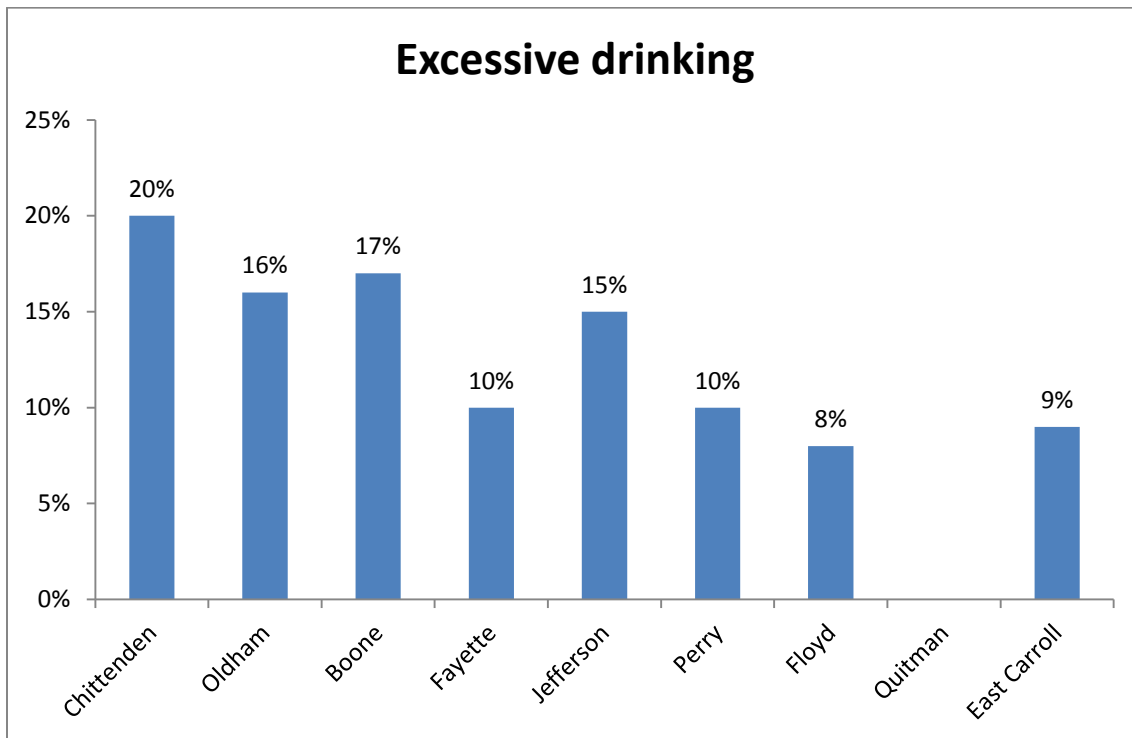


Figure 21. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.

PREVENTIVE HEALTH PRACTICES

TEEN BIRTHS

Teen pregnancy is associated with poor prenatal care and pre-term delivery. Pregnant teens are more likely than older women to receive late or no prenatal care, have gestational hypertension and anemia, and achieve poor maternal weight gain. They are also more likely to have a preterm delivery and low birth weight, increasing the risk of child development delay, illness and mortality.⁴⁵ Figure 22 below compares the teen birth rate per 1,000 female population ages 15-19 for the reference counties.

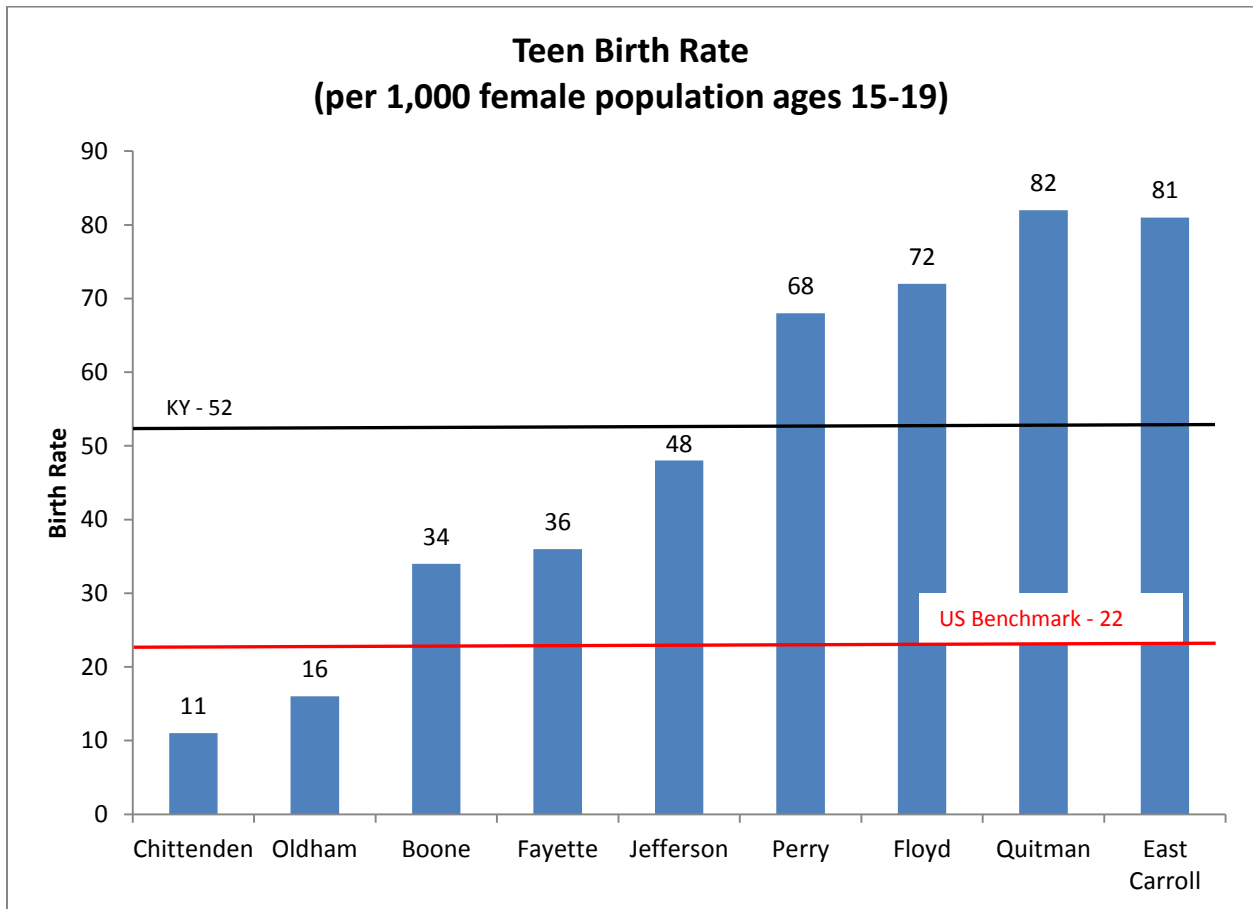


Figure 22. Source: U.Wisc. - County Health Rankings and Roadmaps, 2012.

BREAST CANCER SCREENING

Not counting some kinds of skin cancer, breast cancer is the most common cancer in women, regardless of race or ethnicity. In 2009, 211,731 U.S. women were diagnosed with breast cancer, and 40,676 women died from it.⁸ Although not very common, men get breast cancer too. Out of 100 cases, less than one is a man. Early detection of cancers through preventive screenings provides the best options for early and effective treatment. The American Cancer Society recommends women age 40 and older to have a mammogram every year. The CDC recommends women begin having mammograms at age 50; however, they suggest women talk to their doctor about the need to have mammograms beginning at age 40. The chart below (Figure 23) compares the reference counties with both percentages of women who are over 65 and have had a mammogram within the last 3 years and death rates for breast cancer.

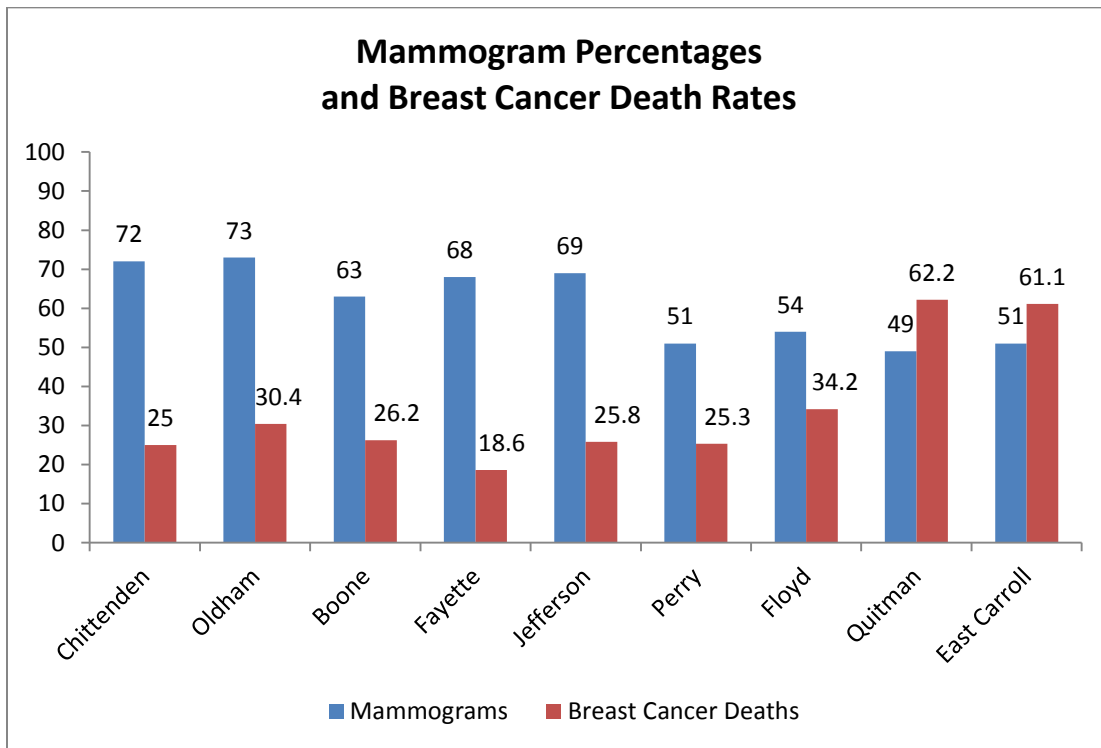


Figure 23. Sources: Mammogram Data, U.Wisc. - County Health Rankings and Roadmaps, 2013 and Breast Cancer Death Rate Data, HHS - communityhealth.hhs.gov, 2009.

Note: Breast cancer death rates are per 100,000 population; mammogram are percentages of the population.

Table 9 compares the percentages of women who had a mammogram at ages 40 and older with women at ages 50 and older. The data is stratified by Kentucky's Area Development Districts.

Table 9. Mammography Percent by ADD District		
District Name	Mammogram at Age 40+	Mammogram at Age 50+
Purchase District	71.3%	78.4%
Pennyrile District	74.5%	78.3%
Green River District	79.8%	80.9%
Barren River District	70.0%	71.7%
Lincoln Trail District	75.7%	74.2%
KIPDA District	74.6%	78.4%
Northern Kentucky District	65.8%	74.1%
Bluegrass District	65.5%	73.2%
Lake Cumberland District	68.7%	69.8%
Cumberland Valley District	61.7%	63.9%
Kentucky River District	66.2%	67.6%
Big Sandy District	68.4%	74.8%
Gateway District	67.3%	69.4%
Buffalo Trace District	68.4%	72.2%
FIVCO District	67.5%	70.8%
KENTUCKY	69.9%	74.3%
U.S.	75.6%	77.9%

Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFS, 2010.



CERVICAL CANCER SCREENING

All women are at risk for cervical cancer. For 2009, 12,357 U.S. women were diagnosed with cervical cancer and 3,909 women died from it.¹¹ Cervical cancer is highly preventable when detected early through screening. Screening through a Pap test is the most effective means of early identification. Women are recommended to be screened for cervical cancer at age 21 and older, although it may be recommended earlier depending on the woman's history. Women should have this Pap test repeated every three years initially and then every five years after age 30.¹ A woman's history may be reason to change these recommendations. Although a vaccine is now available that reduces the risk of Human Papillomavirus (HPV) infection and diseases, far too many girls are not receiving the vaccine. The CDC recommends vaccine be administered routinely to both girls and boys 11 to 12 years of age, and health care providers should consider girls and women between the ages of 9 and 26 and males to age 21.¹⁰ Table 10 displays the percentage of women aged 18 and older who had a Pap test within the last three years.

Table 10. Pap Test by ADD District	
District Name	Percent
Purchase District	82.7%
Pennyrile District	84.4%
Green River District	81.3%
Barren River District	77.9%
Lincoln Trail District	83.6%
KIPDA District	82.5%
Northern Kentucky District	82.5%
Bluegrass District	83.6%
Lake Cumberland District	75.4%
Cumberland Valley District	74.3%
Kentucky River District	74.3%
Big Sandy District	78.3%
Gateway District	74.7%
Buffalo Trace District	74.6%
FIVCO District	76.3%
KENTUCKY	80.9%
U.S.	77.9%
Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.	

COLON CANCER SCREENING

Colorectal cancer is the second leading cancer killer in the U.S. Like other cancers, early detection offers the best options for treatment. Colon cancer screenings are recommended for all adults at age 50, unless their medical history recommends the screenings at an earlier age. Screenings may include both a blood stool screening test and an examination of the colon with either a sigmoidoscopy or colonoscopy procedure. Table 11 below details both the percentage of adults aged 50 and older who had a blood stool test within the past two years and the percentage of adults aged 50 and older who ever had a sigmoidoscopy or colonoscopy examination.

Table 11. Colorectal Screening Percent by ADD District		
District Name	Blood Stool Screening Test	Sigmoidoscopy /Colonoscopy
Purchase District	13.9%	72.4%
Pennyrile District	19.3%	66.0%
Green River District	20.7%	66.1%
Barren River District	14.6%	62.7%
Lincoln Trail District	12.3%	64.3%
KIPDA District	16.0%	65.7%
Northern Kentucky District	11.3%	65.9%
Bluegrass District	11.9%	66.1%
Lake Cumberland District	12.3%	55.1%
Cumberland Valley District	14.1%	54.9%
Kentucky River District	10.3%	52.8%
Big Sandy District	18.4%	60.0%
Gateway District	15.8%	61.6%
Buffalo Trace District	14.5%	59.6%
FIVCO District	11.7%	58.4%
KENTUCKY	14.3%	63.7%
U.S.	17.3%	65.3%
Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.		

ADULT IMMUNIZATIONS FOR INFLUENZA AND PNEUMONIA

Influenza and pneumonia are listed together as one of the ten leading causes of death in all 15 ADD Districts across Kentucky and across the United States. Vaccines for both influenza and pneumonia are widely available today. Flu vaccinations are recommended for most age groups, and pneumonia vaccine is recommended for older adults. For the 2012-2013 flu season, the CDC recommends all persons, ages 6 months and older, should receive a flu vaccination. The CDC also recommends that all older adults be vaccinated for pneumonia. Table 12 shows the percentage of adults aged 65 and older who had a flu vaccination in the past year and the percentage who have ever had a pneumonia vaccination.

Table 12. Vaccine Coverage for Flu / Pneumonia by ADD District		
District Name	Adults Aged 65+ Flu Vaccine	Adults Aged 65+ Pneumonia Vaccine
Purchase District	61.5%	61.8%
Pennyrile District	73.3%	69.6%
Green River District	60.7%	58.2%
Barren River District	60.7%	58.2%
Lincoln Trail District	70.0%	61.4%
KIPDA District	75.6%	62.2%
Northern Kentucky District	65.6%	69.5%
Bluegrass District	68.9%	68.3%
Lake Cumberland District	62.4%	61.6%
Cumberland Valley District	61.3%	56.2%
Kentucky River District	61.5%	70.6%
Big Sandy District	66.3%	69.6%
Gateway District	61.7%	60.2%
Buffalo Trace District	69.4%	65.3%
FIVCO District	61.7%	66.2%
KENTUCKY	67.7%	64.6%
U.S.	67.5%	68.8%
Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.		

ORAL HEALTH

Too many Kentuckians (53.1 percent) lose their permanent teeth due to poor oral hygiene and dental disease. Tooth decay is one of the most common childhood diseases, and it often goes untreated among the poor. In 2010, the percentage of children (age 2 – 17) who had a dental visit within the last year rose with relative family income, from 73 percent of those in families below the poverty level to 88 percent of those at 400 percent or more of the poverty level.⁴ Starting regular dental care for children at a young age makes care more likely and reduces later dental costs. Table 13 below shows the percentage of adult Kentuckians who visited their dentist or a dental clinic in the last year.

Table 13. Visit to Dentist/Dental Clinic in Last Year by ADD District	
District Name	Percent
Purchase District	62.7%
Pennyrile District	59.1%
Green River District	68.5%
Barren River District	57.9%
Lincoln Trail District	66.7%
KIPDA District	66.2%
Northern Kentucky District	65.0%
Bluegrass District	67.8%
Lake Cumberland District	60.6%
Cumberland Valley District	56.7%
Kentucky River District	51.9%
Big Sandy District	57.5%
Gateway District	56.3%
Buffalo Trace District	54.0%
FIVCO District	55.8%
KENTUCKY	63.2%
U.S.	70.1%
Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.	

ENVIRONMENTAL HEALTH

The University of Wisconsin Population Health Institute identifies five environmental health indicators in their *County Health Rankings and Roadmaps*. They include an air pollution indicator, access to recreational facilities, access to healthy food, and percentage of fast food restaurants. All five of these are charted below. The *Community Health Status Reports*, compiled by Health and Human Services, examines a few infectious diseases (primarily foodborne illnesses), toxic chemicals and air quality standards. The American's Health Rankings has developed a single index value for air pollution.

AIR POLLUTION

Air pollution can threaten our health and our environment, including our crops and animals. Health studies have shown a significant association between exposure to fine particles and premature death from heart or lung disease. Other adverse effects on health from air pollution include decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat, and nonfatal heart attacks.⁴⁴ Air pollution comes from a wide variety of sources including automobiles and trucks, factories, power plants and fires. Air pollution measures the fine particulates in the air we breathe. The average exposure of Kentuckians to particulates 2.5 micron and smaller has improved slightly between 2003 and 2012, as shown in Figure 24 below. Despite the decline, Kentucky ranked 44th in both 2011 and 2012. Figure 25 compares the average daily air particulate matter for the reference counties.

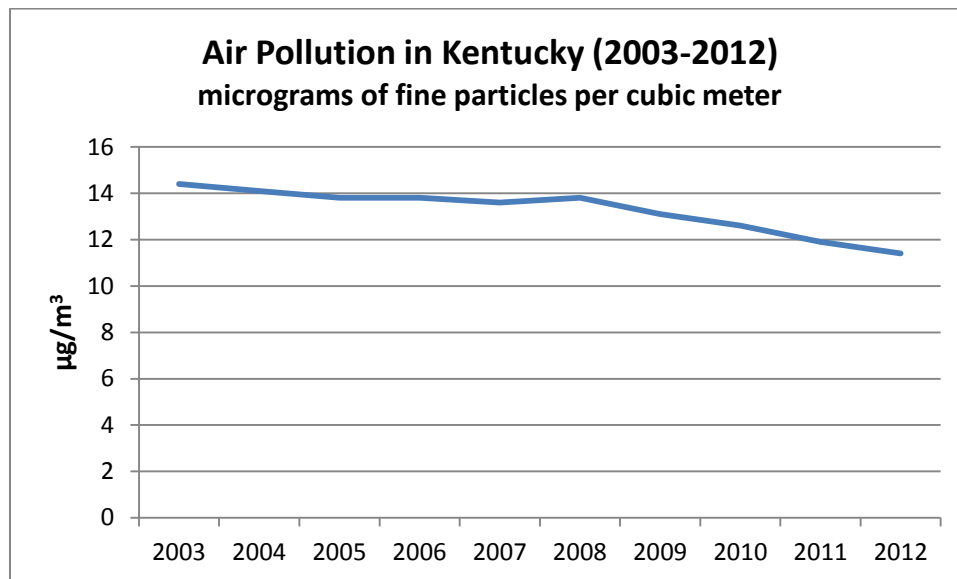


Figure 24. Source: www.americashealthrankings.org, 2012.

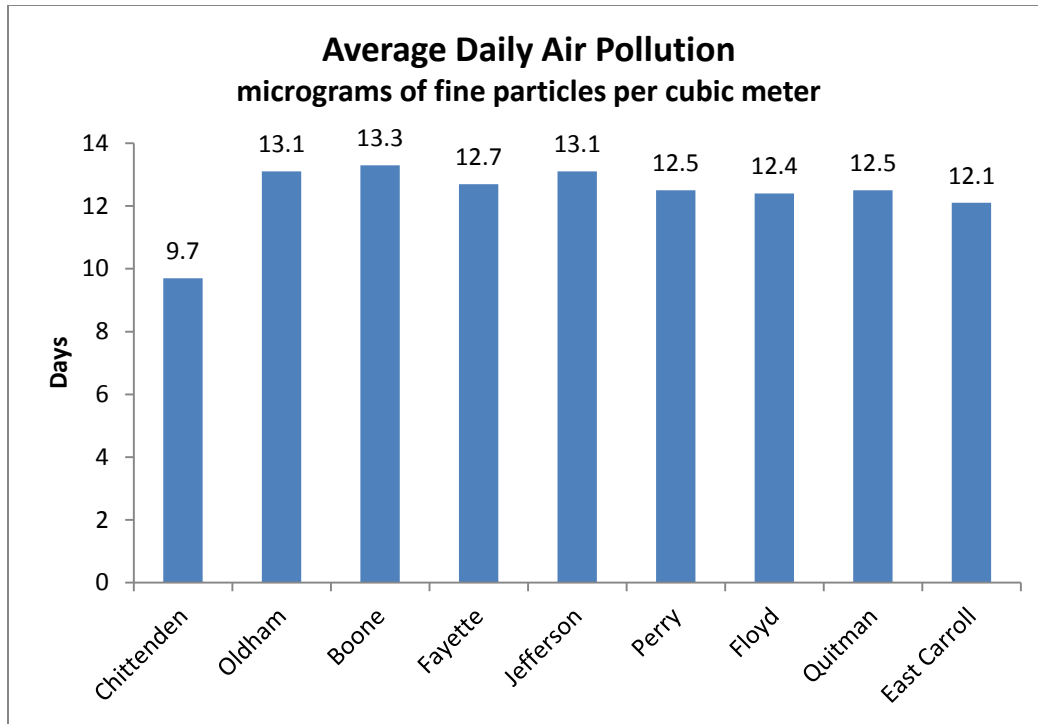


Figure 25. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.

RECREATIONAL FACILITIES

Recreational facilities promote physical activity, particularly in communities where green space and sidewalks are scarce. Recreational facilities are defined as establishments primarily engaged in operating fitness and recreational sports facilities, featuring exercise and other active physical fitness conditioning or recreational sports activities such as swimming, skating, or racquet sports. Figure 26 charts the number of recreational facilities available in each county per 100,000 population. In some counties, a school with a sports track may be the only practical and safe place to walk.

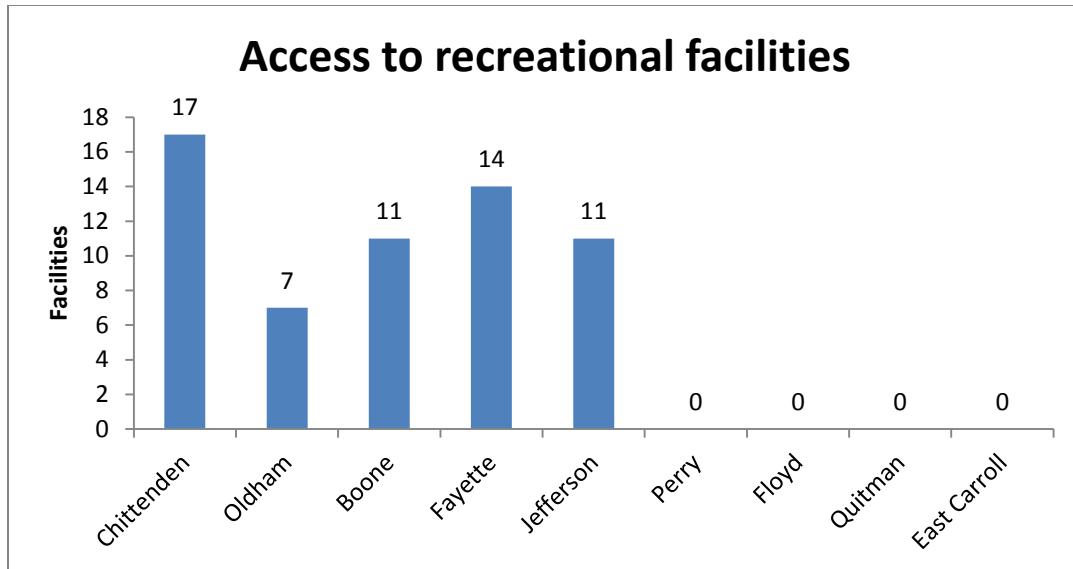


Figure 26. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.

ACCESS TO HEALTHY FOODS

Healthy food promotes better nutrition, which helps to battle overweight and obesity. Figure 27 below identifies that portion of the population with limited access to healthy foods. Limited access to healthy foods measures the proportion of the population who are both living in poverty and do not live close to a grocery store. Living close to a grocery store is defined differently in metro and non-metro counties; in metro counties, it means living less than 1 mile from a grocery store, in non-metro counties less than 10 miles.⁵⁰

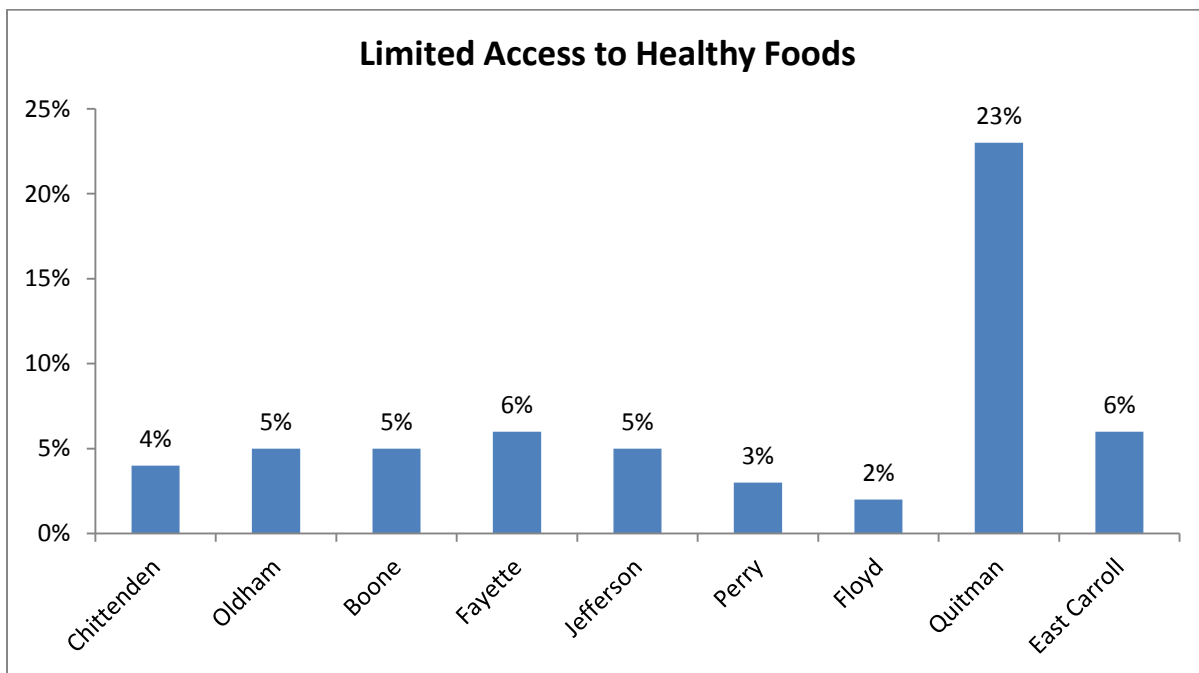


Figure 27. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.

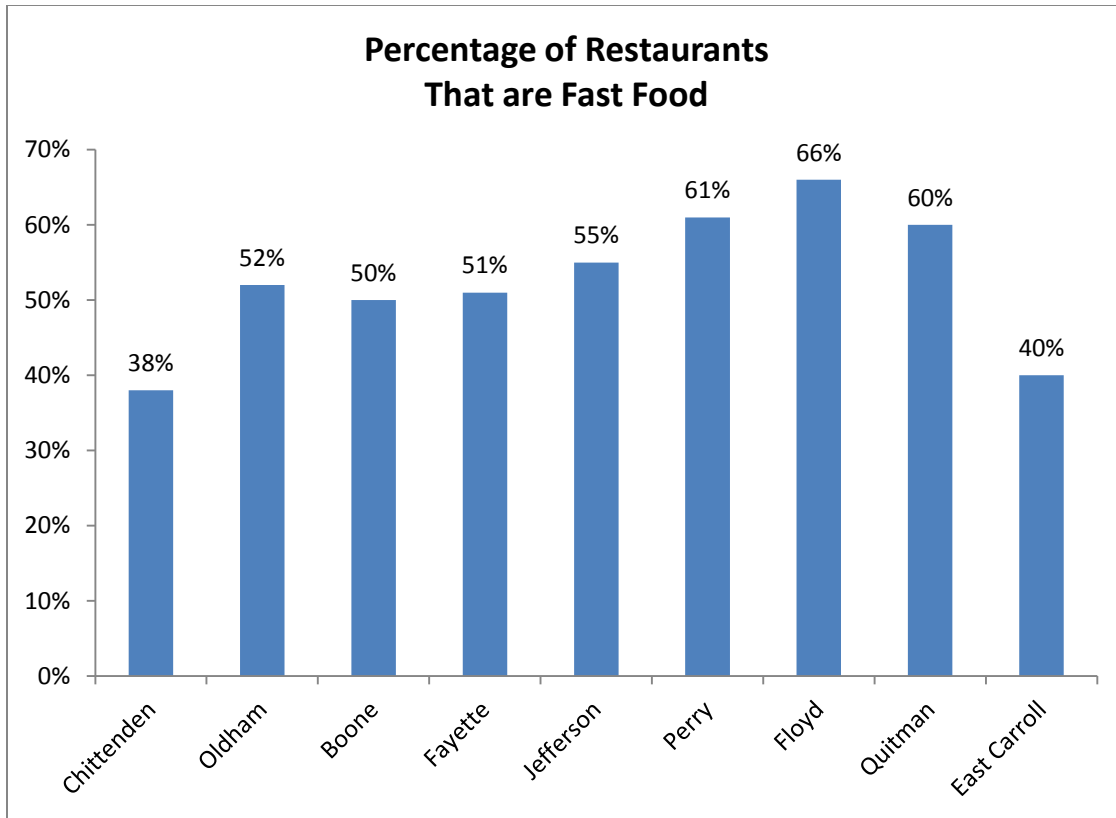


Figure 28. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.

Fast food restaurants generally provide high calorie, high fat foods that are priced low compared to full fare establishments. Figure 28 suggests that there are a high percentage of fast food restaurants in most communities.

FOODBORNE AND RELATED ENVIRONMENTAL INFECTIONS

Table 14 below details the number of reported cases of three infectious diseases, compared to the number expected. The reported cases of Shigella in Fayette and Boone Counties are significantly higher than expected cases. Noted outbreaks have been reported with swimming pools and child care centers.

Table 14. Reported versus Expected Cases of Three Infectious Diseases						
	E.coli		Salmonella		Shigella	
	Reported	Expected	Reported	Expected	Reported	Expected
Chittenden County, VT	4	0	64	63	7	9
Oldham County	2	3	26	34	4	5
Boone County	2	5	56	73	75	21
Fayette County	2	8	112	124	233	41
Jefferson County	10	0	200	338	258	232
Perry County	0	0	10	35	1	12
Floyd County	0	0	16	50	1	17
Quitman County, MS	0	0	20	21	4	7
East Carroll Parish, LA	0	0	14	20	0	5

Source: HHS – communityhealth.hhs.gov, 2009.

TOXIC CHEMICALS

Toxic chemicals pollute air and water when released into the environment. Some reach the food chain, while others are breathed. “The measurement of an environmental chemical in a person’s blood or urine does not by itself mean that the chemical causes disease. For some environmental chemicals, such as lead, research studies have given us a good understanding of the health risks associated with different blood lead levels.”¹⁵ More research is needed to assess the human risk for many environmental chemicals.

Table 15. Toxic Chemicals Released Annually	
County	Pounds
Chittenden County, VT	166,485
Oldham County	nda
Boone County	2,090,690
Fayette County	259,258
Jefferson County	10,829,952
Perry County	628
Floyd County	265
Quitman County, MS	nda
East Carroll Parish, LA	0

Source: HHS – communityhealth.hhs.gov, 2009.
nda = no data available

SOCIAL AND MENTAL HEALTH

MENTAL ILLNESS

“Mental illness accounts for a larger proportion of disability in developed countries than any other group of illnesses, including cancer and heart disease. In 2004, an estimated 25% of adults in the United States reported having a mental illness in the previous year.”¹⁶ Mental illnesses refers collectively to a number of disorders and are characterized by sustained, abnormal alterations in thinking, mood, or behavior associated with distress and impaired functioning.¹⁶ According to BRFSS 2009, Kentuckians age 18 and older reported having 4.6 “poor mental health days” during the last 30 days. The national mean was 3.5 days. Figure 29 below compares the number of “poor mentally unhealthy days” between Kentucky, Vermont (healthiest state) and Mississippi (least healthy state).

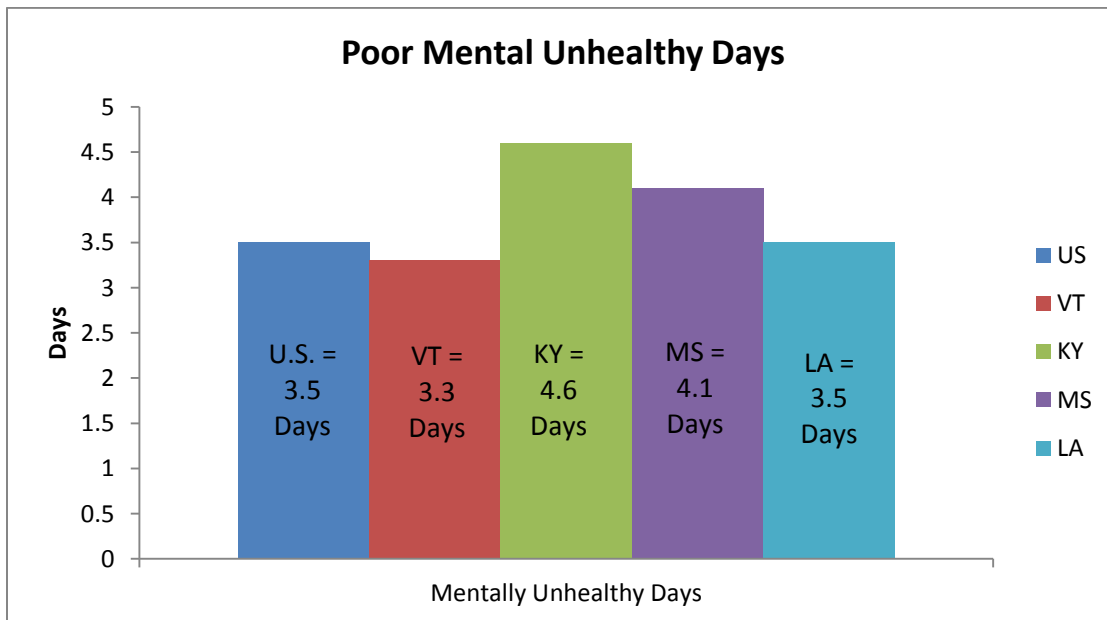


Figure 29. Source: CDC - MMWR: Mental Illness Surveillance Among Adults in U.S., 2011.

Common mental illnesses include anxiety and mood disorders, including depression. “Mental illness is an important public health problem, both in its own right and because the condition is associated with other chronic diseases and their resulting morbidity and mortality.”¹⁶

Figure 30 compares for 2007, the percentage of adults (age 18 and older) who experienced in the last 30 days serious psychological distress (feeling nervous, hopeless, restless, sad or depressed or worthless).

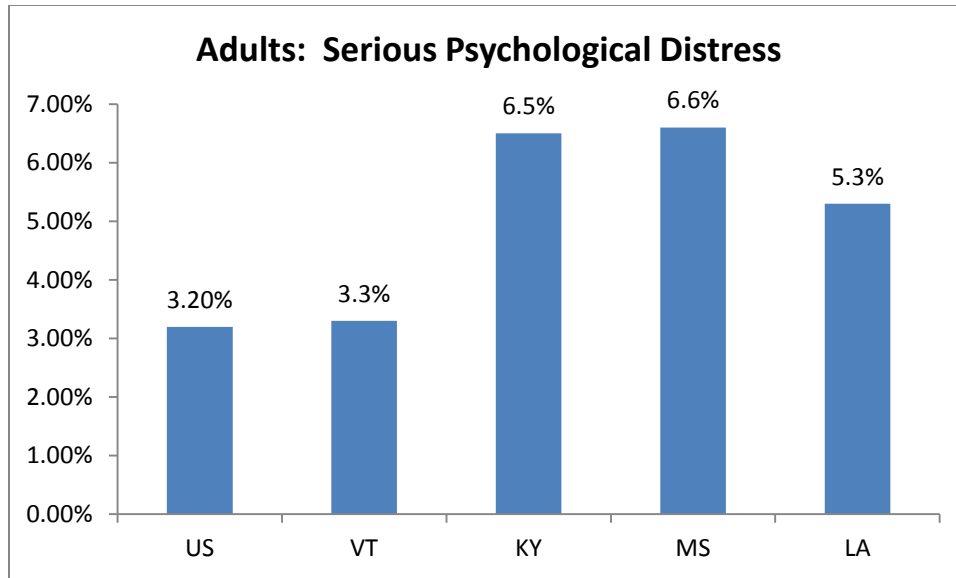


Figure 30. Source: CDC - MMWR: Mental Illness Surveillance Among Adults in U.S., 2011.

Table 16 below details the total number of hospitalizations, days of hospitalization and length of stay for Kentucky hospital having psychiatric beds.

Table 16. Kentucky Psychiatric Inpatient Hospitalizations			
	Admissions	ALOS	Days of Hospitalization
2001	37,303	11.0	411,062
2002	38,116	12.2	407,486
2003	38,387	10.1	393,613
2004	36,989	10.7	395,723
2005	37,044	11.9	410,342
2006	36,441	11.0	420,651
2007	36,867	11.5	430,996
2008	36,592	11.4	422,866
2009	37,286	11.7	429,742
2010	37,522	11.4	432,922

Source: CHFS – 2010 Kentucky Annual Hospital Utilization and Service Report.
 Note: Chart does not include state psychiatric hospital utilization.

SOCIAL SUPPORT

Poor family support, minimal contact with others, and limited involvement in community life are associated with increased morbidity and early mortality. Furthermore, social support networks have been identified as powerful predictors of health behaviors, suggesting that individuals without a strong social network are less likely to participate in healthy lifestyle choices.⁵⁰ When asked on BRFSS surveys, 20 percent of Kentucky respondents (an aggregate of BRFSS 2006-2010 data) indicated that they “never”, “rarely”, or “sometimes” get the support they need. Figure 31 compares the responses for Kentucky’s healthiest counties, least healthy counties and most urban counties.

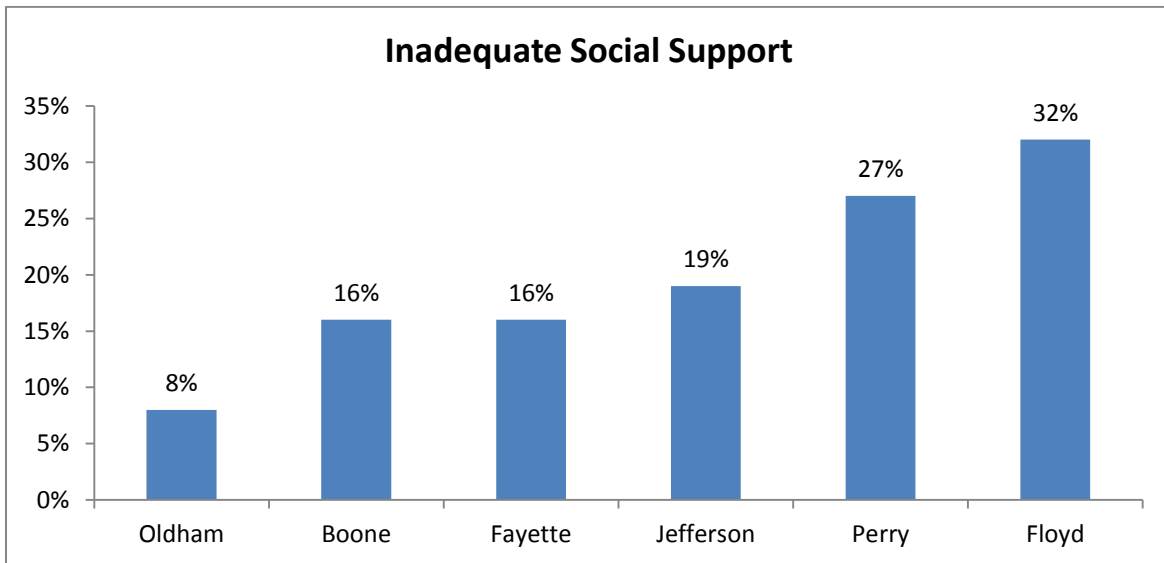


Figure 31. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013

MATERNAL AND CHILD HEALTH

Indicators of health status for maternal and child health include smoking during pregnancy, prenatal care, preterm birth, breastfeeding, and low birthweight.

EARLY PRENATAL CARE

One of the most important factors during pregnancy is early prenatal care.⁴¹ The health of both the mother and the infant are linked when the mother starts receiving prenatal care. Figure 32 below shows the percentage of pregnant women in Kentucky who start receiving prenatal care during their first trimester. The trend line from 2007 to 2011 shows a decline from 74.5 percent to 72.2 percent.

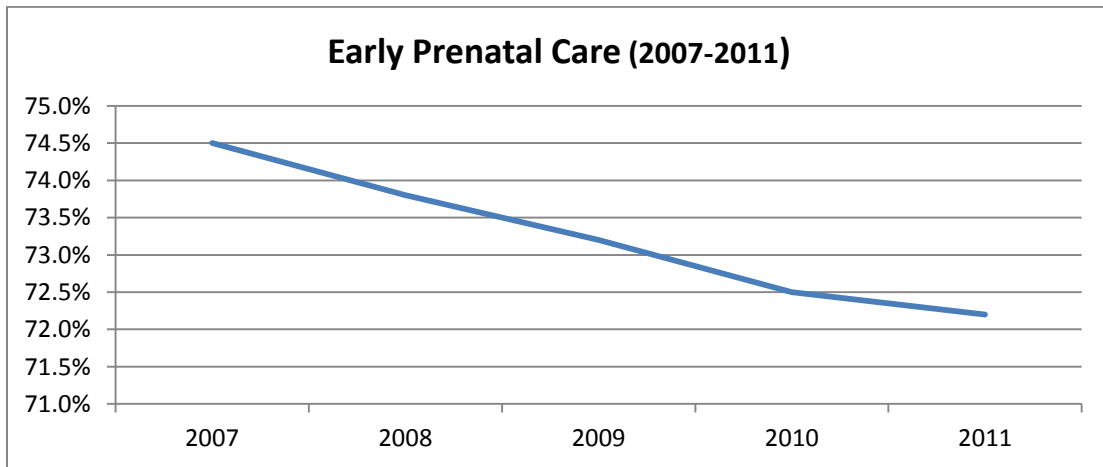


Figure 32. Source: www.americashealthrankings.org, 2012.

PRETERM BIRTH

Preterm births are defined as births occurring in less than 37 weeks gestational age. Kentucky's preterm births have steadily increased, although a decrease was noted in 2011. Figure 33 below illustrates this steady increase as a trend line. For 2012, 13.7 percent of births were preterm, up 3 percent since 1993. Figure 34 compares preterm births among the reference states.

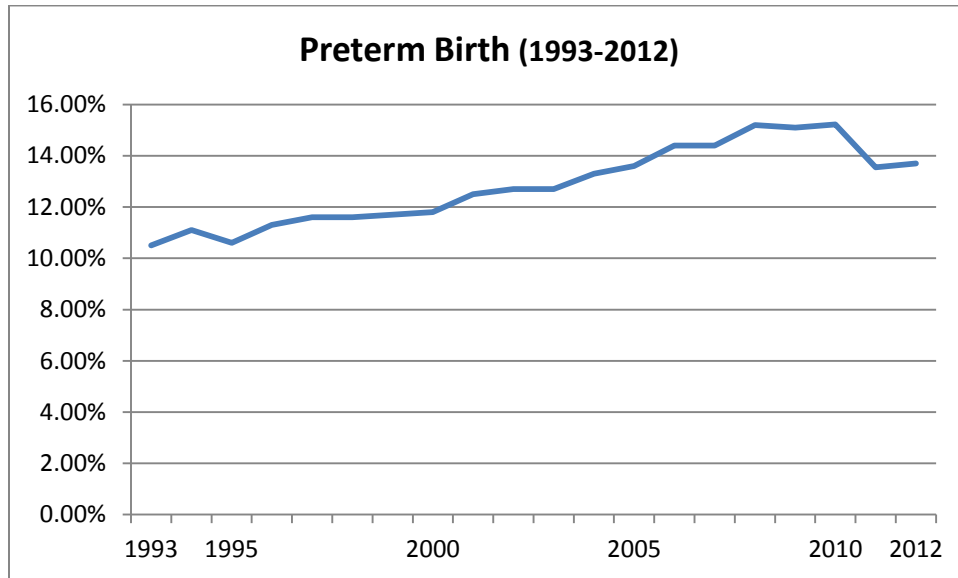


Figure 33. Source: www.americashealthrankings.org, 2012.

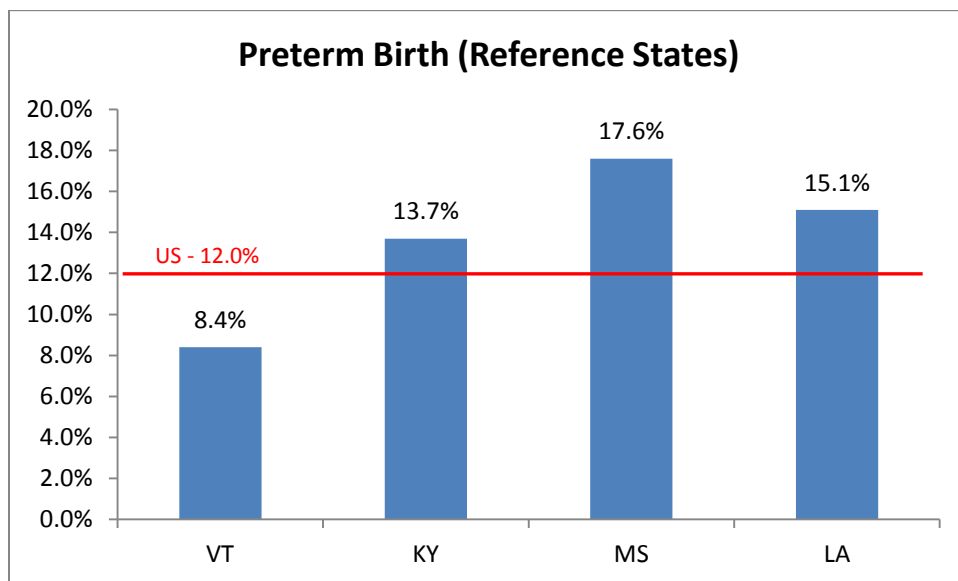
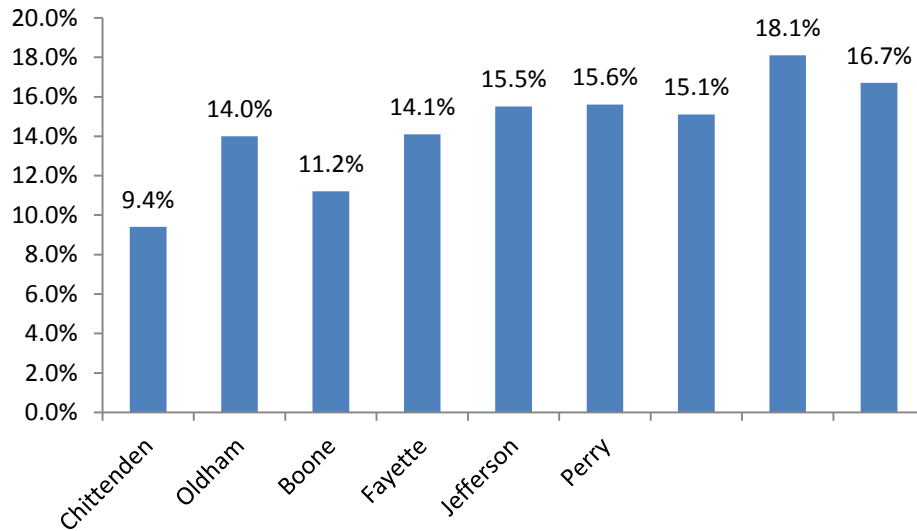


Figure 34. Source: www.americashealthrankings.org, 2012.

Figure 35 compares preterm births for the reference counties.



LOW BIRTHWEIGHT

“Low birthweight babies” weigh less than 2500 grams (5 pounds, 8 ounces) at birth. They are likely to have health problems during the newborn period. Since 2003, there has been a steady increase in the percentage of low birthweight babies in Kentucky. Pregnant women who smoke during their pregnancy are more likely to have low birthweight (LBW) babies than pregnant women who do not smoke during pregnancy. Figure 36 depicts the trend in Kentucky from 1993 to 2012.

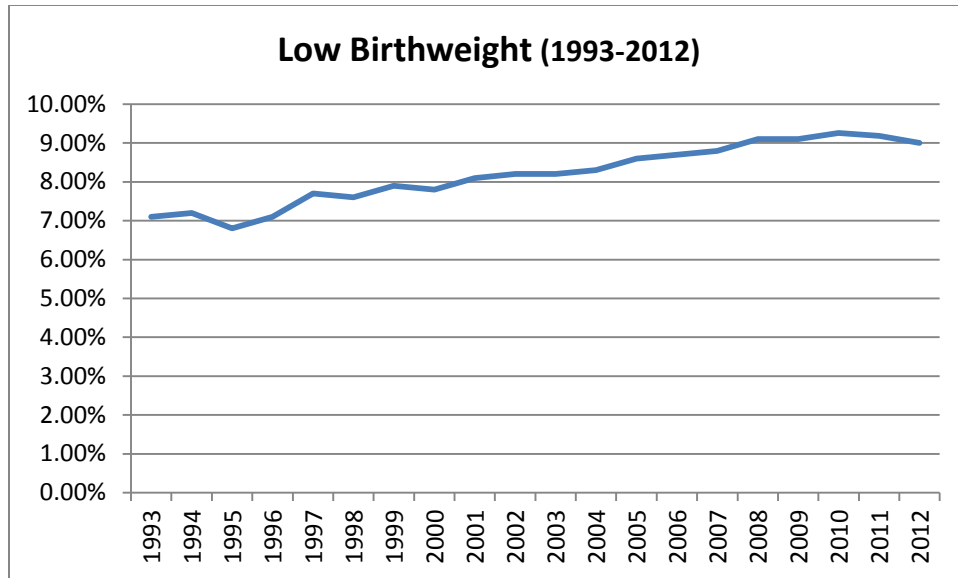


Figure 36. Source: www.americashealthrankings.org, 2012.

Figure 37 below compares Kentucky's low birthweight to the reference states. Figure 38 compares low birthweight among the reference counties.

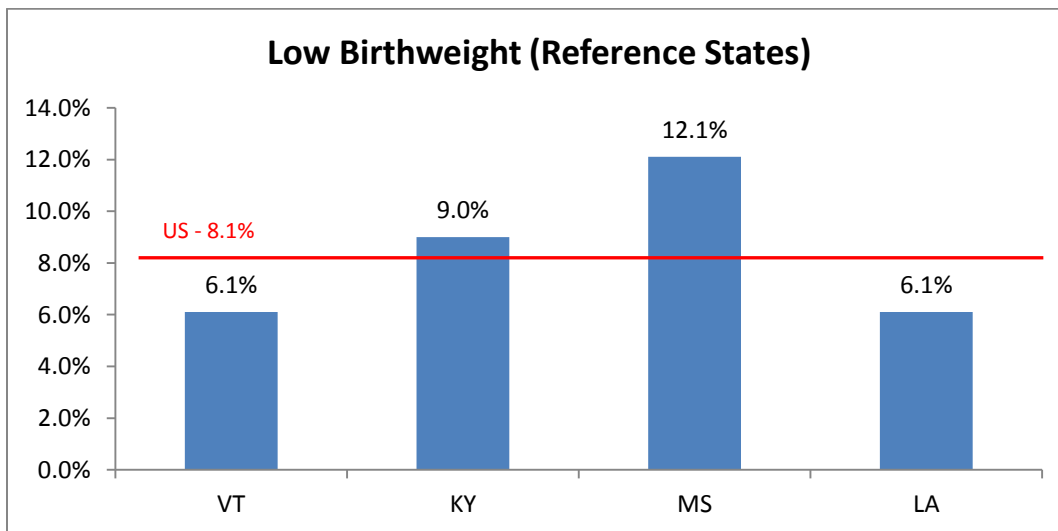


Figure 37. Source: www.americashealthrankings.org, 2012.

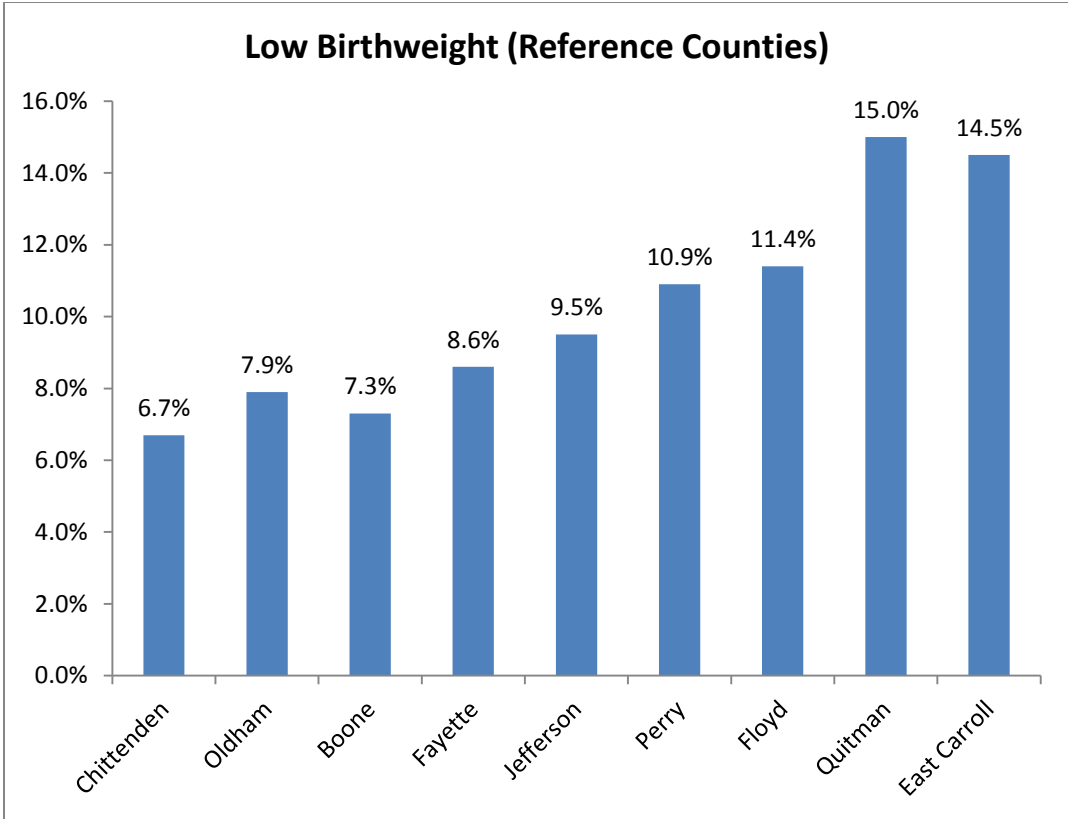


Figure 38. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.

Figure 39 below compares the percentage of births to women under the age of 18 among the reference counties.

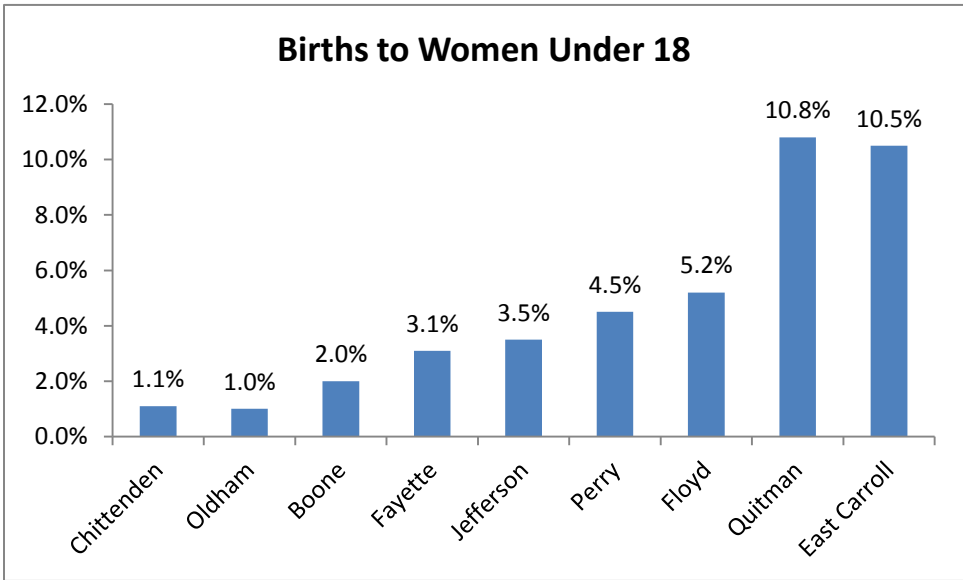


Figure 39. Source: HHS – communityhealth.hhs.gov, 2009.

Figure 40 shows the percentage of births to unmarried women for the reference counties.

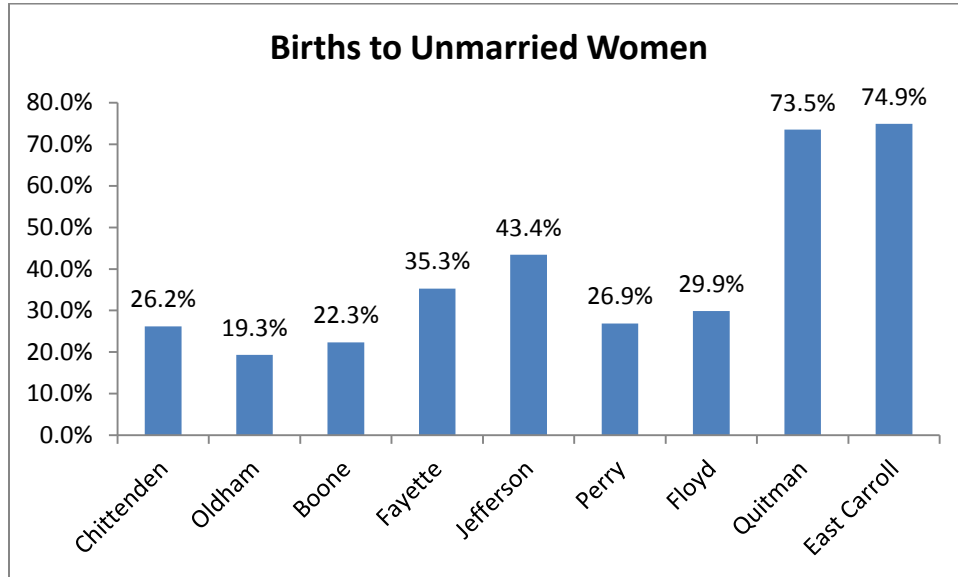


Figure 40. Source: HHS – communityhealth.hhs.gov, 2009.

Pregnant Women Who Smoke

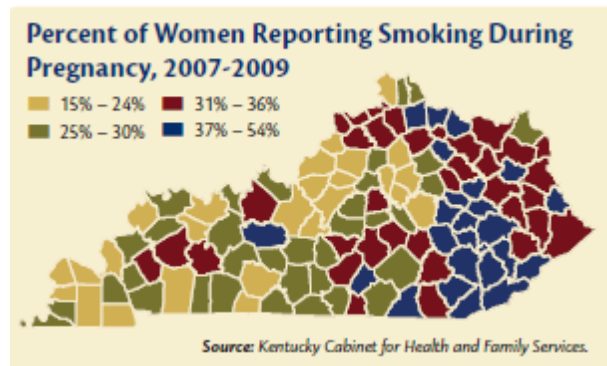


Figure 41. Source: A 2011 Kentucky KIDS COUNT County Data Book Highlight: Smoking During Pregnancy, 2012.

Figure 41 above divides the 120 counties in Kentucky into four groups, representing four percentage ranges of women reporting that they smoked during pregnancy. Table 17 below details the mean infant mortality rate, mean low birth weight percent and mean teenage birth rate for each of these four ranges. No statistical analysis was performed to determine any significance; however, it appears that

higher rates and percentages are associated with higher percentages of women reporting that they smoked during pregnancy.

Table 17. Birth Outcomes by Kentucky Counties Ranked by Percentage of Women who Smoke While Pregnant				
Percent of Pregnant Women who Smoke	# of Counties	Infant Mortality	Low Birth Weight	Teenage Birth Rate
15% - 24%	26	6.65	8.67%	45.00
25% - 30%	34	6.35	8.69%	54.15
31% - 36%	37	7.38	9.20%	59.49
37% - 54%	23	8.09	9.74%	67.17

Source: HHS: communityhealth.hhs.gov, 2009.

BREASTFEEDING

Breastfeeding has important health benefits for infants and mothers. Breast milk is the most complete form of nutrition for infants, offering a range of benefits for both infant and mother. This includes helping to prevent childhood obesity as well as ear infections. The benefit of breastfeeding is also extended to nursing mothers, as it decreases the risk of breast and ovarian cancers, osteoporosis, can promote weight loss, and it contributes towards feelings of attachment between mother and child. Breastfeeding is also economically beneficial as nationally it is estimated that there is a decrease of \$3.6 billion in annual health care costs due to breastfeeding, as well as a decrease in cost for public supplementation programs (WIC) and inpatient costs. Figure 42 examines breastfeeding percentages in the U.S., Vermont, Kentucky, Mississippi and Louisiana, comparing five categories. In each category, Vermont, the healthiest state, exceeds the U.S. and the other states with the percentage of breastfeeding.

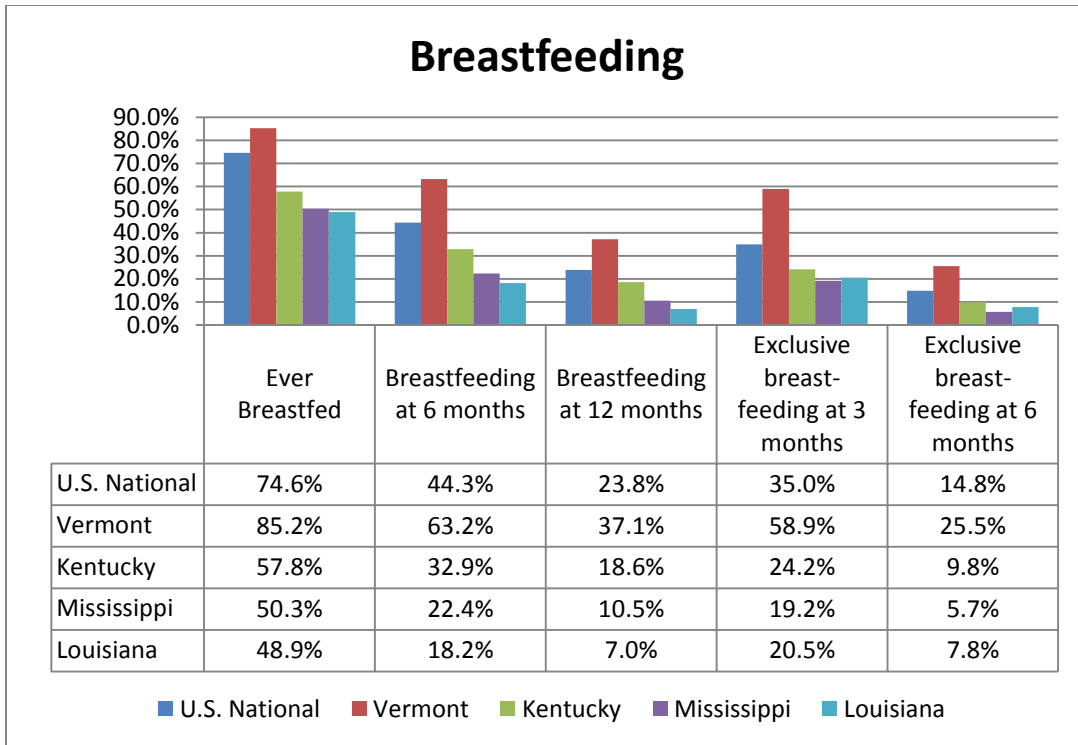


Figure 42.

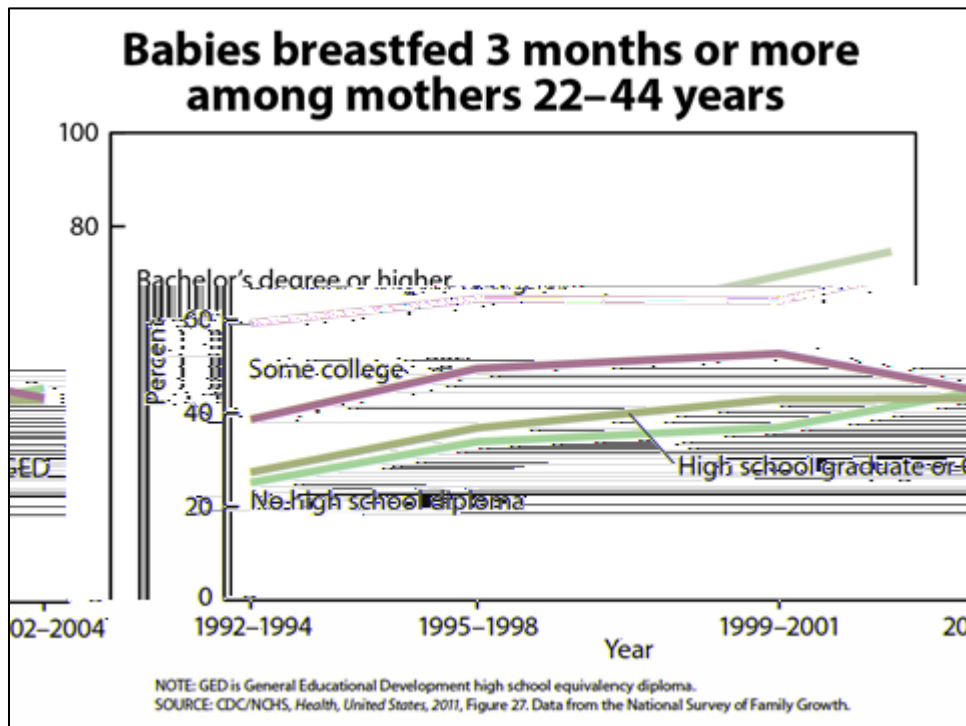


Figure 43. Source: CDC/NCHS, Health, United States, 2011.

Nationwide, breastfeeding rates are higher among women with at least a four-year college degree or higher (see Figure 43 above).

MORTALITY

PREMATURE DEATH

Mortality can be assessed by examining premature death and leading causes of death. Premature death is represented by the Years of Potential Life Lost before age 75 (YPLL – 75) and is age adjusted per 100,000 population. According to *American's Health Rankings* for 2012, Kentucky's rate for YPLL – 75 is 9,790. The U.S. rate was 7,151, with states ranging from 5,621 (Minnesota) to 11,113 (Mississippi). For this indicator, Vermont ranked #2, with a YPLL – 75 of 5,712. The bar graph below (Figure 44) compares the premature death of Kentucky, the 44th healthiest state, with the healthiest state (Vermont) and the least healthy states (Mississippi and Louisiana). The County Health Rankings and Roadmaps ranked Kentucky's counties using a composite of three years (2008-2010) for its rankings. Kentucky's counties ranged from 5,430 (Oldham) to 16,735 (Breathitt).

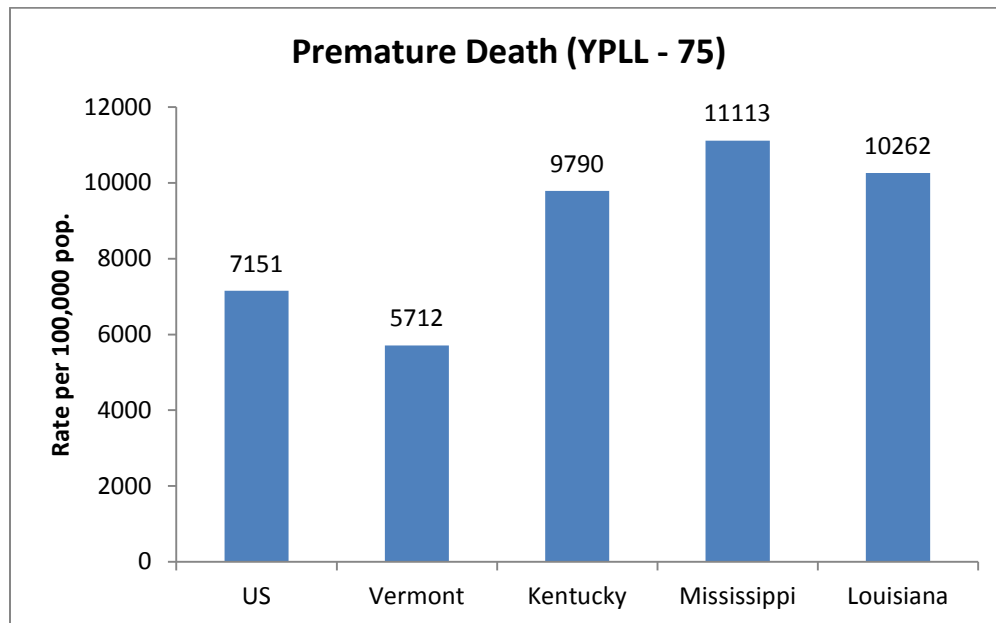


Figure 44. Source: America's Health Rankings, 2012.

Premature death has declined slightly in the U.S. as shown in 1990-2011 trend line shown below (Figure 45). Kentucky premature deaths improved from 1990 to 2001, and deteriorated from 2002 to 2012.

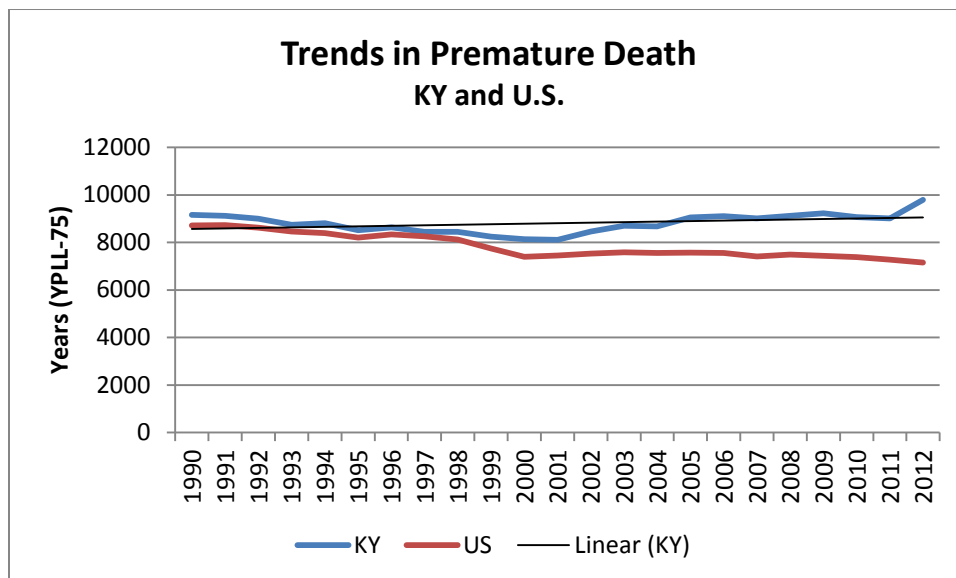


Figure 45. Source: America's Health Rankings, 2012.

"According to 2009 mortality data, cancer, unintentional injury, heart disease, suicide and deaths occurring during the perinatal period are the top five causes of premature death in the United States. Many of these causes of death are preventable through lifestyle modifications. Lung cancer is the largest contributor towards premature cancer deaths and smoking cessation can greatly decrease the risk of lung cancer. Heart disease is tied to several modifiable risk factors such as obesity, diabetes and sedentary lifestyle. A variety of intervention strategies that encourage healthy lifestyles and preventative care can be effective in decreasing premature death."⁴⁵

LEADING CAUSES OF DEATH

Although mortality rates vary between states and among all 120 counties in Kentucky, the ten leading causes of death are strikingly consistent across the state and the nation. With one exception, eleven different causes of death account for the top ten causes of death in the United States, Kentucky and its 15 Area Development Districts (ADD). Table 18 underscores the reality that regardless of where one lives in the state, Kentuckians are dying from essentially the same things, although at different rates, and those things are not materially different from what is killing Americans as a whole. Of significant note is that tobacco use, diet, and physical activity have direct influence on heart disease, cancers, stroke, and chronic lower respiratory diseases. Separately, diet and physical activity have direct influence on diabetes.

For each of the ADD Districts (abbreviations identified in the map below), Table 18 shows its top ten leading causes of death as ranked 1 through 10.

Table 18. Comparison of Ten Leading Causes of Death by Ranking in U.S. and KY with Kentucky's 15 Area Development Districts

	U.S.	KY	PU	PR	GR	BR	LT	KI	NK	BG	LC	CV	KR	BS	GW	BT	FI
Heart Disease	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Malignant Cancers	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2
Stroke	3	5	3	4	4	4	4	4	5	4	4	4	5	5	5	5	5
Chronic Lower Respiratory Diseases	4	3	4	3	5	3	5	3	3	3	3	3	4	4	4	4	4
Unintended Injuries	5	4	5	5	3	5	3	5	4	5	5	5	3	3	3	3	3
Diabetes	6	6	7	7	7	8	9	6	6	9	9	6	6	6	6	7	8
Alzheimer's Disease	7	8	6	9	6	6	6	7	7	8	8	7	10		8	9	6
Influenza & Pneumonia	8	7	9	6	8	7	7	9	8	6	6	9	7	8	9	6	7
Kidney Disease	9	9	10	8	10	9	8	8	9	7	7	8	9	7	7	8	9
Septicemia	10	10						10		10		10	8	9	10	10	
Suicide				10	9	10	10		10		10			10			10
Atherosclerosis			8														

Sources: U.S. – Centers for Disease Control and Prevention, National Vital Statistics Reports (Vol 56, No 10), KY & ADDs – KY DPH Website. All data for 2005. Note: Numbers indicate the rank of that cause of death.

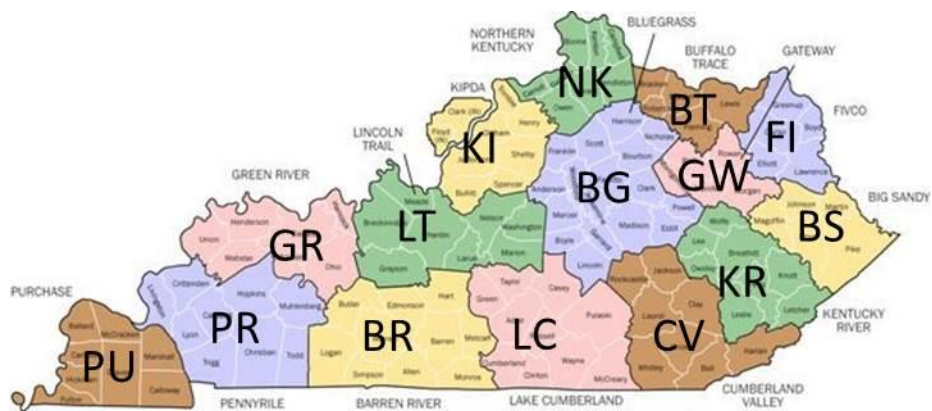


Table 19. Death Rates from Common Causes

	U.S. Rate	CH, VT	Oldham	Boone	Fayette	Jefferson	Perry	Floyd	QT, MS	ECP, LA
Breast Cancer (Female)	24.1	25.0	30.4	26.2	18.6	25.8	25.3	34.2	62.2	61.1
Colon Cancer	17.5	18.2	24.6	23.5	20.0	21.9	33.4	19.4	40.8	48.6
CVD	154.0	143.7	185.6	176.0	174.1	146.4	390.1	215.6	426.6	341.7
Homicide	6.1	2.3	nrf	2.4	5.0	8.8	8.1	nrf	24.4	45.0
Lung Cancer	52.6	58.2	66.7	76.9	60.5	77.6	129.5	111.6	154.9	123.0
MVA Injuries	14.6	7.2	13.9	13.6	10.2	13.5	45.1	36.3	70.0	56.6
Stroke	47.0	33.2	94.9	48.0	45.0	54.5	39.8	60.8	95.6	115.0
Suicide	10.9	10.3	11.1	8.9	10.4	13.0	19.3	14.3	nrf	nrf
All accidents	39.1	27.4	22.5	23.6	30.5	26.6	58.4	53.4	51.5	67.0

Source: HHS – communityhealth.hhs.gov, 2009. nrf = no report, fewer than 10 events during time period
Rates are age-adjusted to the 2000 standard and are per 100,000 population.

Table 19 above contrasts death measures selected by HHS in its *Community Health Status Reports*. Homicides are higher in the urban counties of Fayette and Jefferson and not as high in the suburban counties of Boone and Oldham. Cardiovascular Deaths Disease (CVD) and lung cancer deaths are strikingly higher in Perry and Floyd Counties in Kentucky.

CARDIOVASCULAR DISEASE DEATHS

Cardiovascular disease (CVD) remains the leading cause of death across the U.S. and across Kentucky, despite improvements since 1990. "Cardiovascular disease is influenced by a long list of modifiable risk factors; smoking, hypertension, hypercholesterolemia, diabetes, low levels of physical activity, poor diet, and obesity. Influencing one or more of these risk factors has the potential to greatly decrease the burden of cardiovascular disease."⁴⁵

Since 1990, Kentucky's age-adjusted death rate for CVD improved by 31.4 percent, compared to the U.S. improvement of 34.1 percent. Figure 46 depicts the trends for both Kentucky and the U.S. between 1990 and 2012.

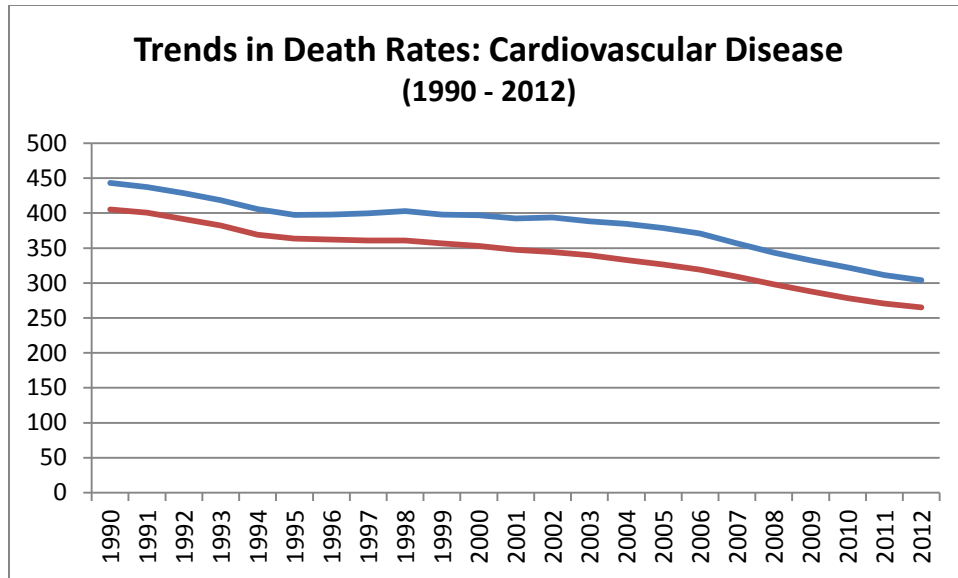


Figure 46. Source: America's Health Rankings, 2012.

CANCER DEATHS

Malignant cancers are the second leading cause of death in most areas. According to the America's Health Rankings, Kentucky led the nation in cancer death rates (all cancer sites) for the last 8 years (2005-2012). Figure 47 below compares the trends of Kentucky with that of the nation since 1990. The nation shows a slight decline; Kentucky shows a slight increase, but some improvement for both 2011 and 2012.

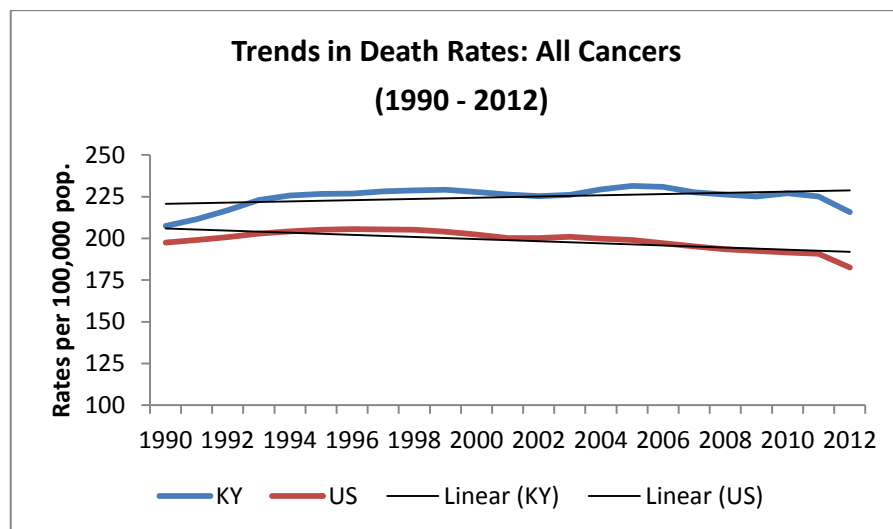


Figure 47. Source: America's Health Rankings, 2012.

Regarding the burden of deaths from lung and bronchus cancers, Kentucky had the highest death rates among all the states for each year between 1999 and 2009. During that same period, Kentucky also had the highest percentage of adult smokers for 9 of those 11 years. The following two charts compares, for our reference states, the incidence and death rates for lung and bronchus cancer (Figure 48) and the percentages of smokers (Figure 49). One the following page, the two charts compares, for our reference counties, the incidence and death rates for lung and bronchus cancers (Figure 50) and the percentage of smokers (Figure 51).

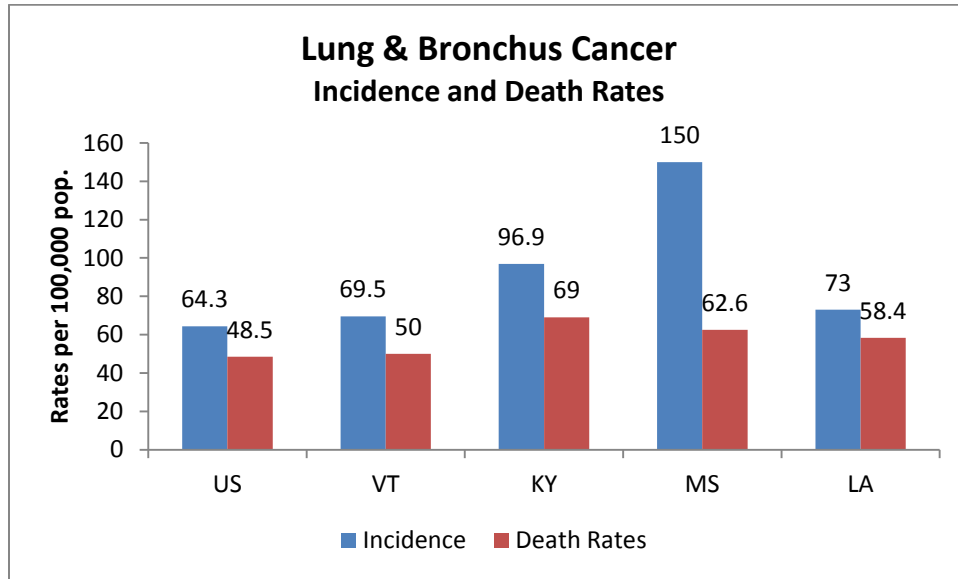


Figure 48. Source: America's Health Rankings, 2012.

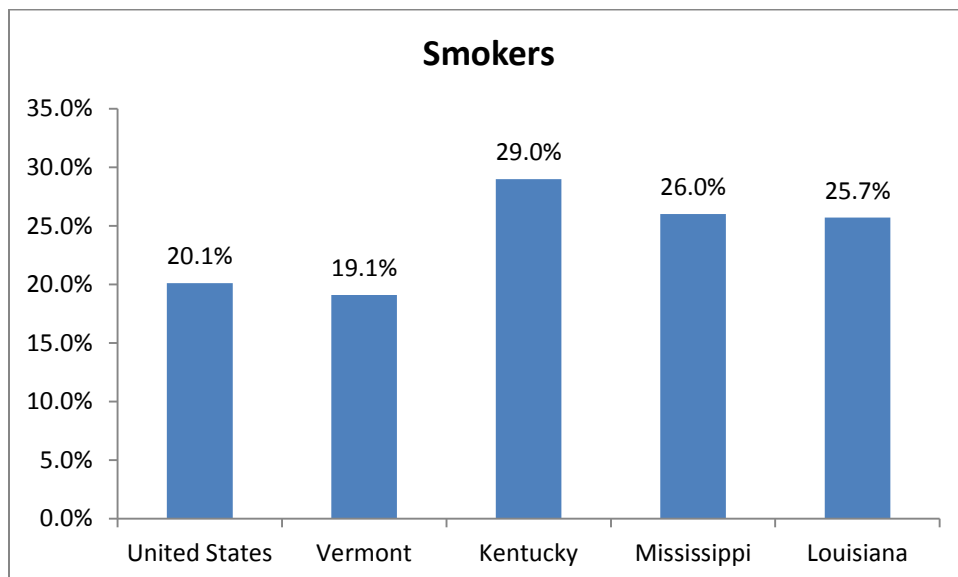


Figure 49. Source: America's Health Rankings, 2012.

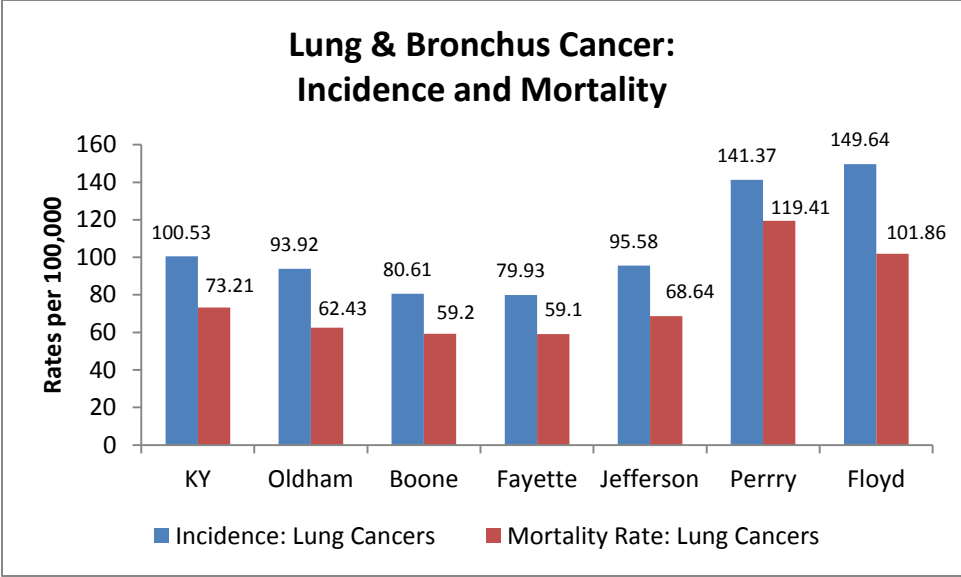


Figure 50. Source: Kentucky Cancer Registry, 2013

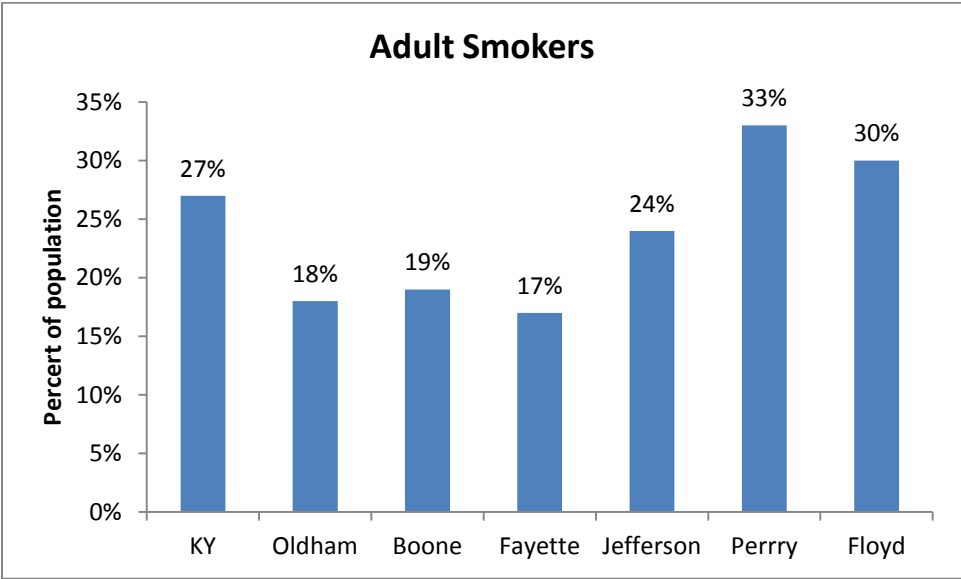


Figure 51. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013

INFANT MORTALITY

"Infant mortality is associated with many factors surrounding birth, including but not limited to: maternal health, prenatal care, and access to quality healthcare. Congenital malformations are the leading cause of infant mortality followed closely by disorders related to preterm birth and low birthweight. The demographics of the mother are important predictors of infant mortality, with minority women and low socioeconomic status women having the highest rates. In addition to the demographic factors, there are also many health care system factors that influence infant mortality. Improving access to and utilization of ongoing prenatal care is a key strategy towards decreasing infant mortality, as well as reducing the teen birth rate and maternal smoking."⁴⁵

Infant mortality is commonly used to compare health between different countries because of its association with access to health care in the prenatal period and first year of life. The nation's overall infant mortality rate is consistently higher than other developed countries (Figure 52), and significant racial and ethnic disparities exist.

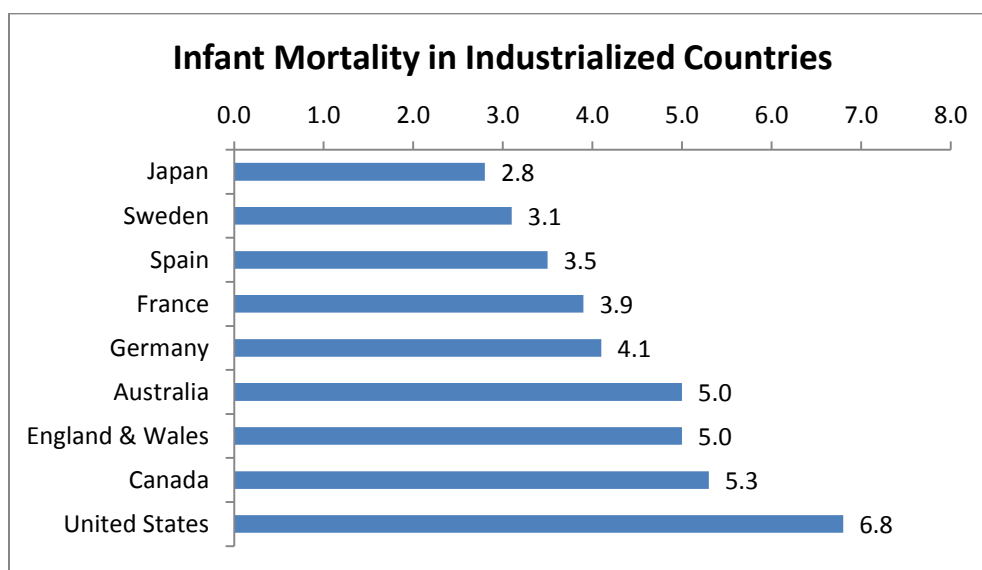


Figure 52. Source: *Health, United States, 2007*, www.cdc.gov/nchs/data/hus/hus07.pdf#listtables.

The importance of addressing the disparities of health in the U.S. and Kentucky can be seen when comparing the infant mortality rates along racial and ethnic lines as seen in the Figure 53. Disparities influence infant mortality in several ways, including the stress from prejudice, access to health care and access to prenatal care; these disparities significantly impact infant mortality.

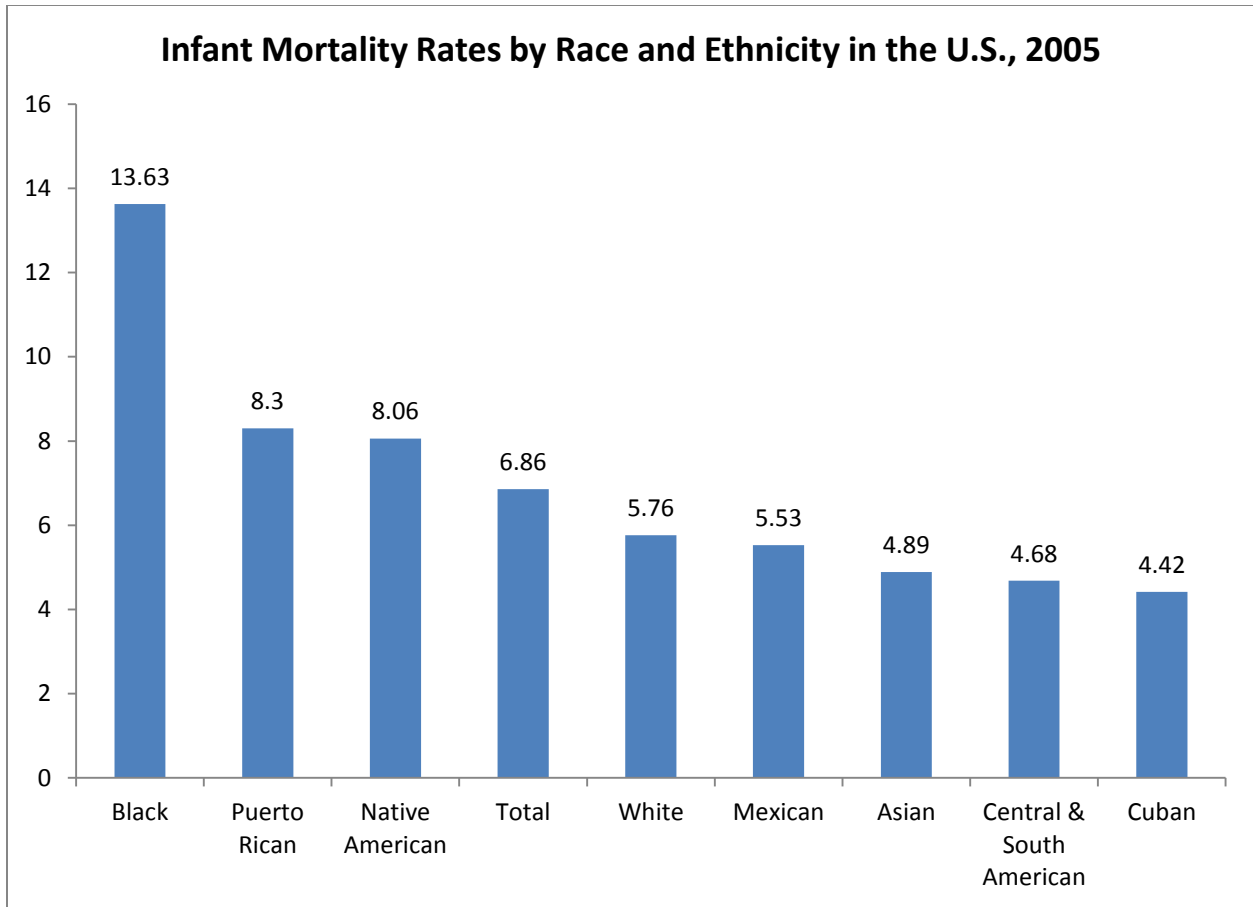


Figure 53. Source: MacDorman MF, Mathews TJ: Recent Trends in Infant Mortality in the United States, 2008.

Table 20 below compares infant mortality rates among Kentucky’s healthiest, least healthy, and most urban counties, including rates for Chittenden County, Vermont and Quitman County, Mississippi.

Table 20. Infant Mortality											
	U.S. Rate	CH, VT	KY Rate	Oldham	Boone	Fayette	Jefferson	Perry	Floyd	QT, MS	ECP, LA
Infant Mortality	6.9	5.8	6.8	3.3	5.2	7.3	6.1	6.9	7.3	10.7	7.8

Source: HHS- communityhealth.hhs.gov, 2009.

LIFE EXPECTANCY

Life expectancy at birth is a summary measure of mortality. Figure 54 below infers that citizens living in healthier counties live longer lives. Kentucky's two healthiest counties have life expectancies of 77.4 years for Oldham County and 77.0 years for Boone County. Kentucky's two least health counties have life expectancies of 72.4 for Perry County and 72.9 for Floyd County. A citizen in Chittenden, Vermont can expect to live for an additional 1.3 years over living in Kentucky's healthiest county.

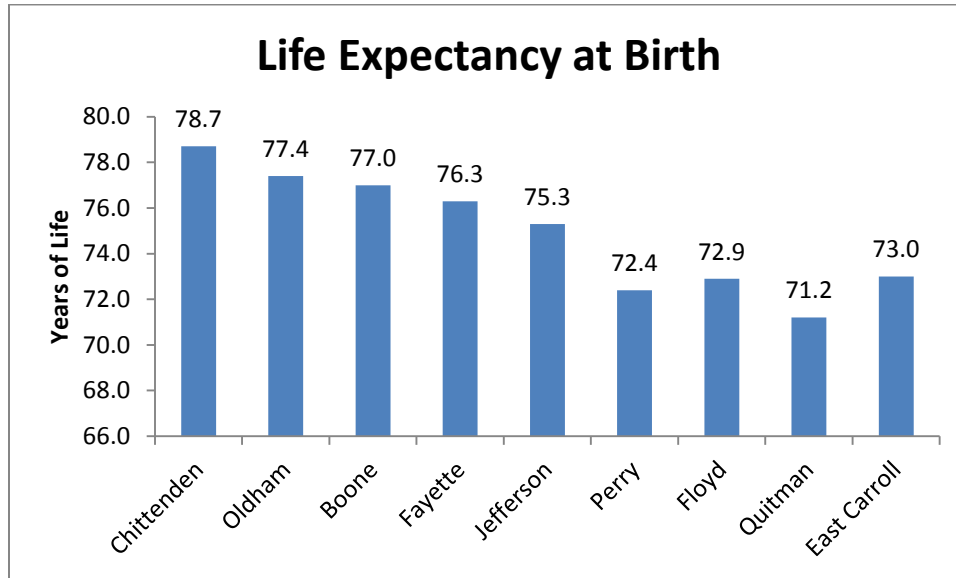


Figure 54. Source: HHS – communityhealth.hhs.gov, 2009.

MORBIDITY

Healthier people have lower incidences of chronic disease than less healthy people. Assessing morbidity requires a look at how many Kentuckians suffer from several diseases or injuries. Family history often hints at someone's predisposition to develop heart disease, diabetes, and other chronic disease.

DIABETES

Diabetes has significant impacts on a person's life and on a state's health expenditures, particularly when complications develop such as gangrenous wounds leading to amputations, eye disease leading to blindness, and kidney disease leading to dialysis. Diabetes is linked to higher rates of heart disease, high blood pressure and stroke. For 2012, 10.8 percent of Kentuckians report having been diagnosed with diabetes, compared with 7.7 percent in Vermont and 12.4 percent in Mississippi. Overall, the nation has 9.5 percent (Figure 55).

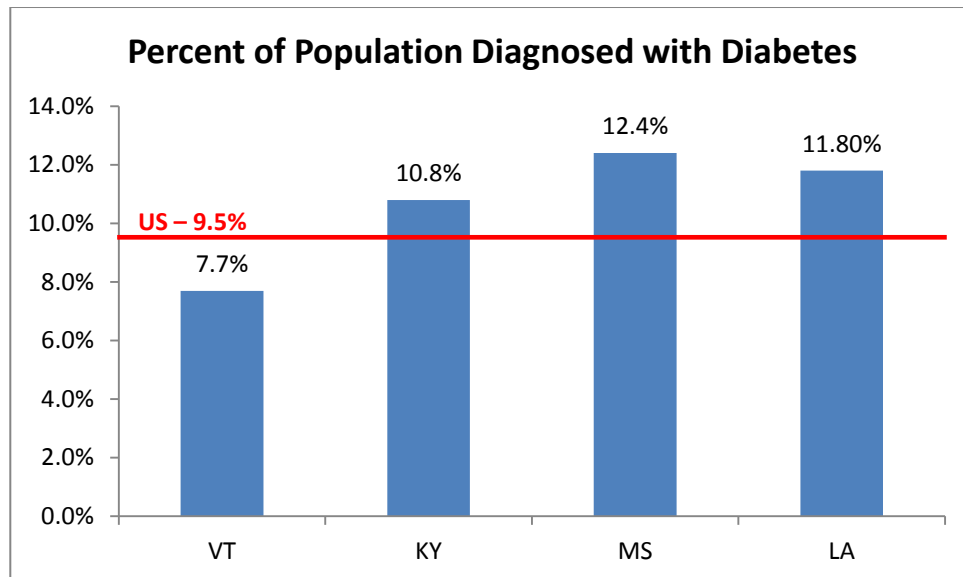


Figure 55. Source: www.americashealthrankings.org, 2012.

Figure 56 below shows the growth of diabetes in Kentucky between 1996 and 2011.

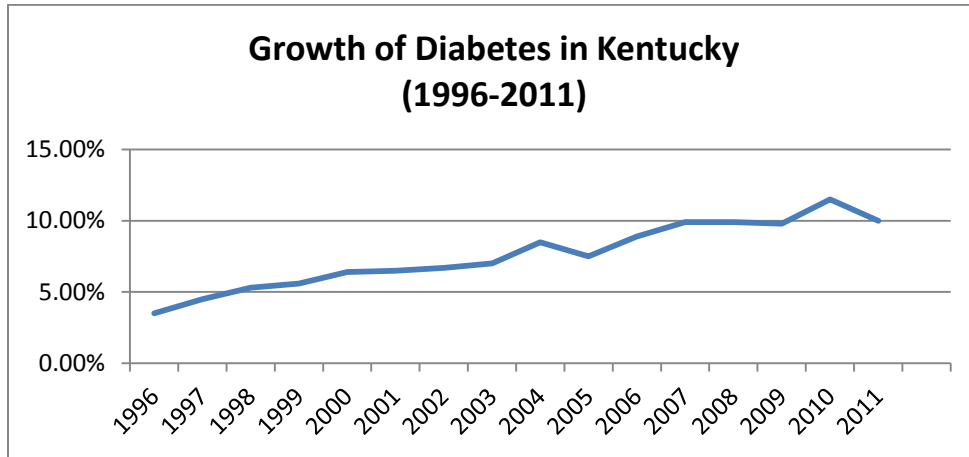


Figure 56. Source: www.americashealthrankings.org, 2011, 2012.

Table 21 below delineates the percentage of Kentuckians, living in the 15 Area Development Districts (ADD), who state they have been diagnosed with diabetes.

Table 21. Population with Diagnosed Diabetes by ADD District	
District Name	Percent
Purchase District	10.0%
Pennyrile District	8.3%
Green River District	10.6%
Barren River District	8.1%
Lincoln Trail District	11.4%
KIPDA District	6.6%
Northern Kentucky District	10.6%
Bluegrass District	8.8%
Lake Cumberland District	10.1%
Cumberland Valley District	16.2%
Kentucky River District	15.9%
Big Sandy District	16.9%
Gateway District	12.8%
Buffalo Trace District	9.7%
FIVCO District	15.8%
KENTUCKY	10.0%
U.S.	8.7%
Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.	

HEART DISEASE

Heart Disease is the leading cause of death across the U.S. and across Kentucky. Figure 57 below compares the percent of Kentuckians who report having had a heart attack with the healthiest state and the least healthy state. As seen in the bar chart, Kentucky's 6.1 percent surpasses the least healthy state of Mississippi with 5.4 percent and Vermont, the healthiest state, with 4.4 percent. Table 22 on the following page delineates heart attacks, coronary heart disease, and strokes by Kentucky ADD Districts.

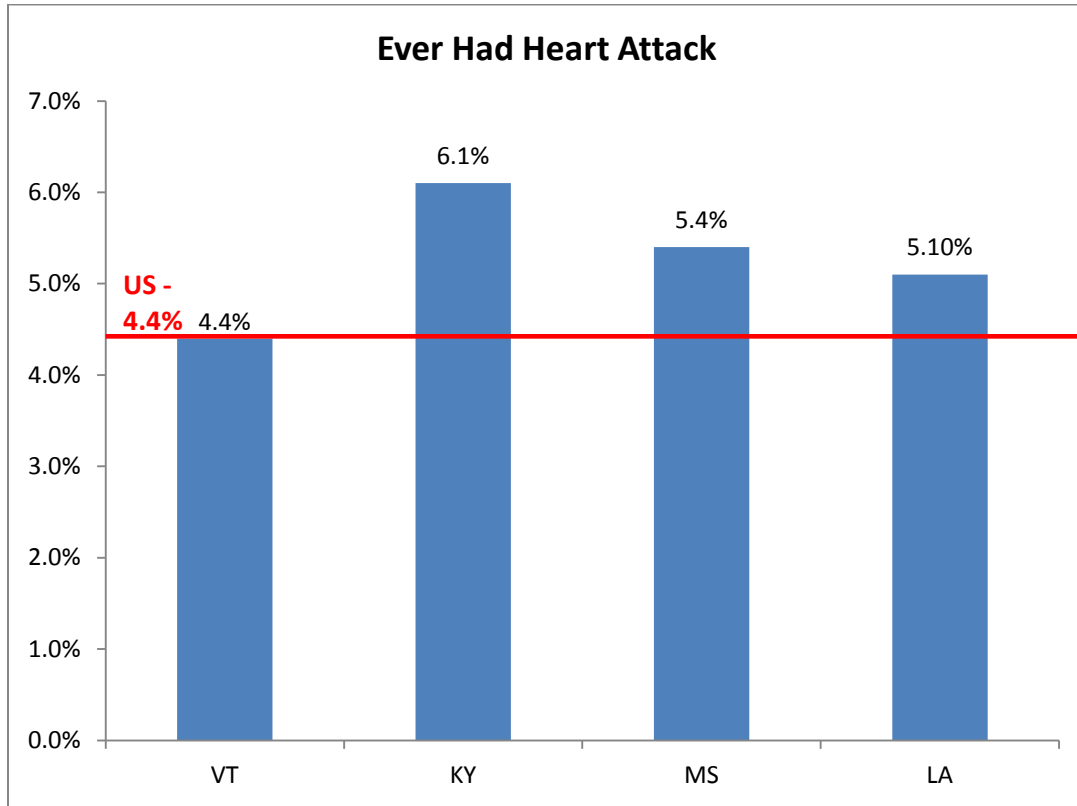


Figure 57. Source: www.americashealthrankings.org, 2012.

Table 22. Cardiovascular Disease by ADD District

District Name	Hx of Heart Attack	Hx of Coronary Heart Disease	Hx of Stroke
Purchase District	5.0%	4.2%	4.0%
Pennyrile District	6.3%	6.1%	4.0%
Green River District	5.1%	6.0%	5.1%
Barren River District	7.3%	8.1%	3.2%
Lincoln Trail District	7.3%	6.3%	2.9%
KIPDA District	4.0%	4.1%	2.4%
Northern Kentucky District	5.1%	5.3%	1.6%
Bluegrass District	5.5%	4.1%	3.8%
Lake Cumberland District	9.0%	8.3%	6.2%
Cumberland Valley District	5.5%	7.8%	3.6%
Kentucky River District	10.1%	8.1%	4.4%
Big Sandy District	10.3%	7.7%	5.9%
Gateway District	8.0%	6.6%	3.5%
Buffalo Trace District	6.4%	6.4%	3.1%
FIVCO District	9.7%	11.3%	6.1%
KENTUCKY	6.0%	5.8%	3.5%
U.S.	4.2%	4.1%	2.7%

Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.
Hx = History – had a heart attack, had a stroke

HYPERTENSION

Hypertension (high blood pressure) is a significant risk factor for stroke, heart disease, congestive heart failure and kidney disease. In Kentucky, more than 1 out of every 3 adults (36.3 percent) has high blood pressure. Figure 58 shows the increase in hypertension between 1996 and 2011.

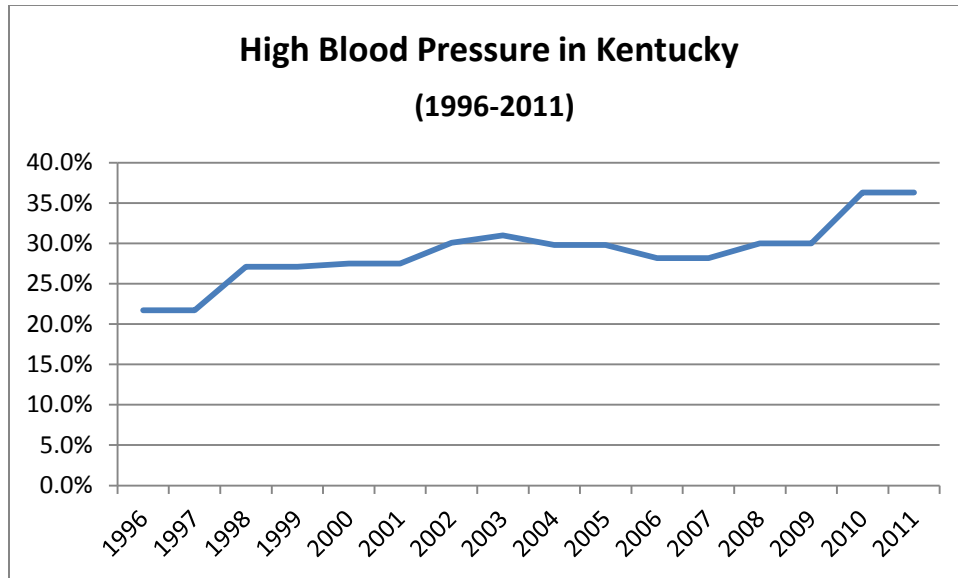


Figure 58. Source: www.americashealthrankings.org, 2011.

In Vermont, the healthiest state, 29.3 percent of adults report having high blood pressure. In the nation's least healthy states, Mississippi and Louisiana report having 39.3 percent and 38.4 percent, respectively. Kentucky has 32.8 percent of its citizens reporting having high blood pressure. Overall, 30.8 percent of adults in the U.S. have been told they have high blood pressure (See Figure 59).

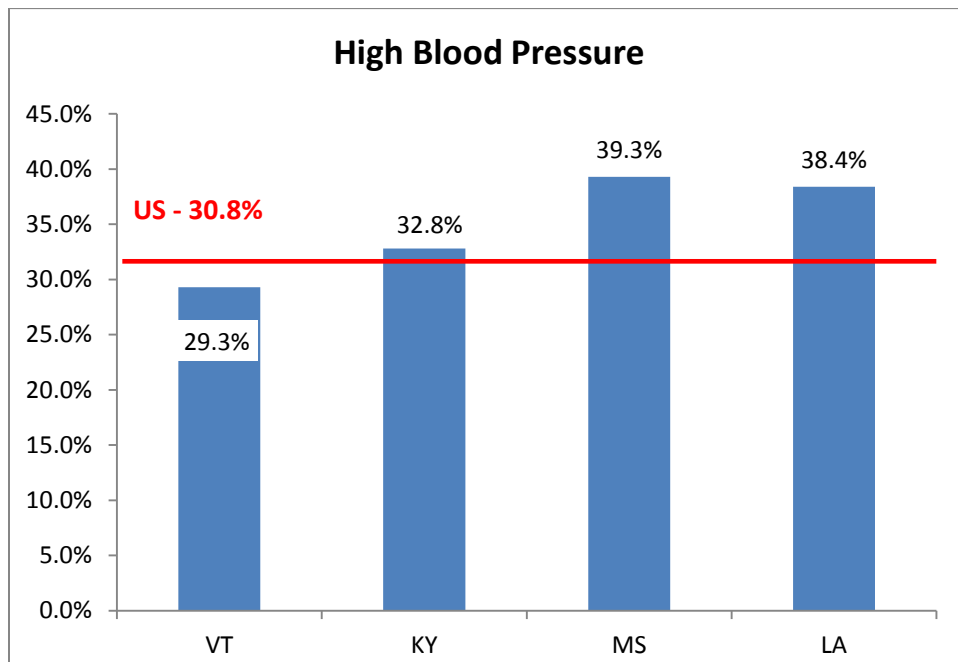


Figure 59. Source: www.americashealthrankings.org, 2012.

HIGH CHOLESTEROL

High cholesterol is an important risk factor for heart disease, particularly when combined with obesity. The percentage of the population suffering from high cholesterol is on the rise, as well as the percent with obesity. Figure 60 below shows the increase in Kentuckians with both high cholesterol and obesity. About 40% of Americans have high cholesterol. Because there often are no symptoms, it's crucial to have one's cholesterol level checked. Sustained, increased cholesterol levels can lead to heart disease, heart attack and circulatory problems.⁴

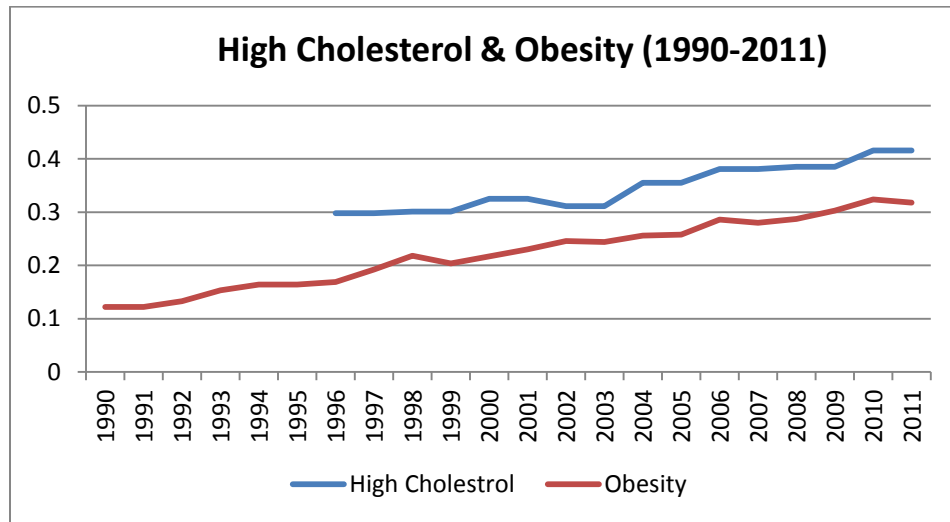


Figure 60. Source: www.americashealthrankings.org, 2011.

Of those Kentuckians who have had their blood cholesterol checked, 41.6 percent have been told they have high cholesterol. Only one state, South Carolina exceeds Kentucky's percentage. Figure 61 below compares Kentucky to the healthiest and least healthy state.

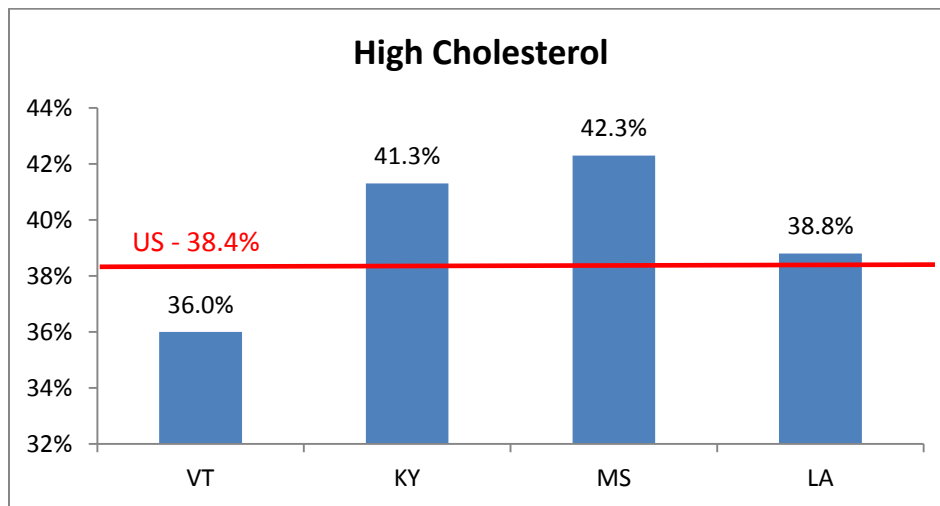


Figure 61. Source: www.americashealthrankings.org, 2012.

Nearly 2 out of 3 adults with high LDL cholesterol and about half of adults with high blood pressure don't have their condition under control. In fact, more than 80% of people who don't have their high blood pressure or cholesterol under control already have health insurance, indicating that for most patients, health insurance is not sufficient to achieve control.¹⁹ "There are five measures that capture the risk factors and burden of cardiovascular diseases: cardiac heart disease, high cholesterol, heart attack, stroke, and hypertension."⁴⁵ These chronic conditions can be managed by many individuals through lifestyle changes and healthcare interventions. However, they do place a burden on many of the affected individuals by constraining options and activities available to them and can result in expensive and ongoing expenditures for health care.

ASTHMA, DISABILITIES, AND ORAL HEALTH

Kentuckians have higher rates than the U.S. of adult asthma, disabilities that limit activity due to physical, mental or emotional problems, and complete edentulism (loss of all teeth) among those aged 65 and older.

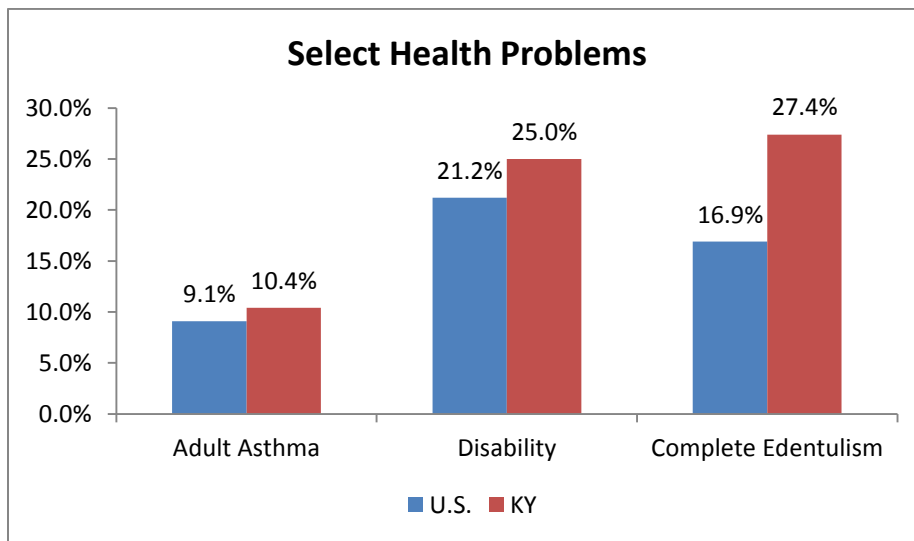


Figure 62. Source: KDPH – KY Area Development District (ADD) Profiles, 2010.

Table 23. Selected Health Problems by ADD District

District Name	Adult Asthma *	Disability *	Complete Edentulism *
Purchase District	6.6%	22.9%	24.4%
Pennyrile District	11.7%	25.9%	32.1%
Green River District	14.4%	27.9%	23.7%
Barren River District	9.9%	27.2%	25.8%
Lincoln Trail District	9.9%	23.3%	30.4%
KIPDA District	10.1%	19.7%	23.4%
Northern Kentucky District	10.2%	21.4%	21.7%
Bluegrass District	8.8%	22.9%	77.1%
Lake Cumberland District	10.6%	27.3%	32.8%
Cumberland Valley District	10.1%	32.6%	34.5%
Kentucky River District	13.5%	37.6%	45.7%
Big Sandy District	18.0%	39.1%	40.6%
Gateway District	8.2%	30.3%	35.8%
Buffalo Trace District	10.2%	26.5%	32.3%
FIVCO District	12.0%	30.3%	29.2%
KENTUCKY	9.1%	21.2%	16.9%
U.S.	10.4%	25.0%	27.4%

Source: KDPH – KY Area Development District (ADD) Profiles, KY BRFSS 2010.
* Asthma = adults who currently have asthma
* Disability = adults with limited activity
* Complete edentulism = adults 65 and older who had all their natural teeth extracted

INJURIES

Unintended injuries are the leading cause of death for most Americans under the age of 45. For Kentuckians of all ages, unintended injuries are the fourth highest cause of death. Motor vehicle accident fatalities were the most common cause of death for Kentuckians aged 1 – 34 during the 2000-2009 time period. Unintentional poisonings were the leading cause of death for Kentuckians in the 25-64 age group in 2010, and unintentional falls were the leading cause for Kentuckians in the 75 and older age group.³⁷

MOTOR VEHICLE ACCIDENTS

Total death rates (deaths per 100 million miles traveled) from motor vehicle accidents (MVA) has declined slightly in both the U.S. and Kentucky (see Figure 63) since 1996. Use of safety restraints in Kentucky for all front seat occupants (driver and passenger) has increased from 67 percent in 2006 to 80 percent in 2010. Seatbelt usage and improved air bag systems have contributed to the decline in MVA fatalities. For the years 2008, 2009, and 2010, the number of deaths in Kentucky due to motor vehicle accidents per 100,000 population were 20.3, 18.9, and 17.3, respectively. For 2009, Kentucky's rate of 18.9 was higher than the U.S. (12.9) and Vermont (11.7) but lower than Mississippi (25.3).

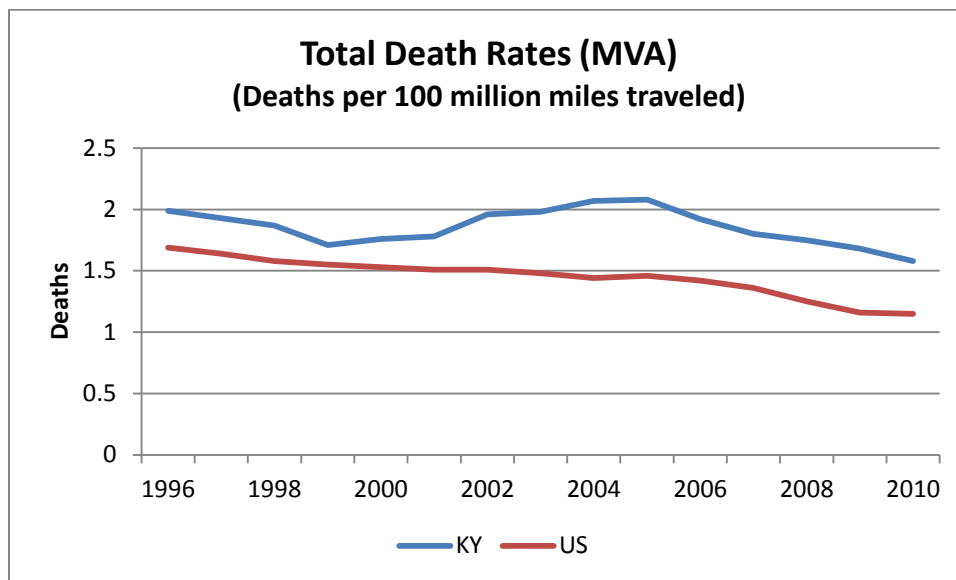


Figure 63. Source: KY State Police - Traffic Collision Facts, 2010 Report.

Figure 64 below details the age-specific fatality rate for motor vehicle traffic accidents between 2004 and 2008.

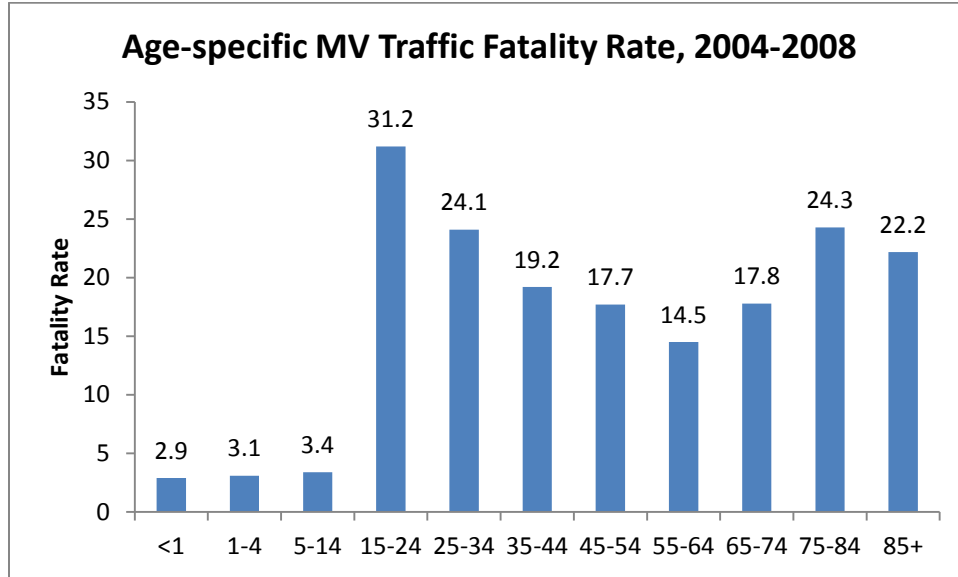


Figure 64. KIPRC: Kentucky Injury Indicators 2004-2008, 2010.

Table 24 breaks down the type of motor vehicle fatalities for the 2004-2008 time period.

Table 24. Type of Motor Vehicle (MV) Fatality		
	Number	Percent
MV Occupants	1,547	41.36%
Motorcyclist	324	8.66%
Pedestrian	219	5.86%
Pedal cyclist	22	0.59%
Other or unspecified	1,628	43.53%

Source: KIPRC: Kentucky Injury Indicators 2004-2008, 2010.

Table 25 below provides collision data for 2010 for Kentucky ADD Districts.

Table 25. Collisions By Area Development District (2010)							
	Total reported	Fatal Accidents	Injury Accidents	Total Killed	Total Injuries	Alcohol Involved	Drugs Involved
Purchase ADD	5,234	36	1,154	40	1,730	234	66
Pennyrile ADD	5,506	44	1,093	50	1,596	205	78
Green River ADD	6,258	32	1,201	35	1,758	243	55
Barren River ADD	8,218	46	1,624	57	2,358	317	66
Lincoln Trail ADD	6,582	55	1,278	60	2,017	311	59
KIPDA ADD	32,302	105	5,964	109	8,989	1,115	179
Northern Kentucky ADD	14,072	42	2,218	45	3,181	593	145
Buffalo Trace ADD	1,251	7	223	8	349	58	18
Gateway ADD	2,032	19	457	21	667	68	52
FIVCO ADD	3,486	30	697	31	1,055	95	98
Big Sandy ADD	3,962	33	1,037	36	1,684	155	247
Kentucky River ADD	2,414	36	710	41	1,132	92	108
Cumberland Valley ADD	5,970	64	1,500	66	2,383	161	162
Lake Cumberland ADD	4,447	30	934	33	1,516	159	63
Bluegrass ADD	25,722	115	4,672	128	6,781	956	221
Totals	127,456	694	24,762	760	37,196	4,762	1,617
Source: KSP - Traffic Collision Facts: 2010 Report.							

Figure 65 shows seat belt usage for the period 2006 through 2010 for Kentucky.

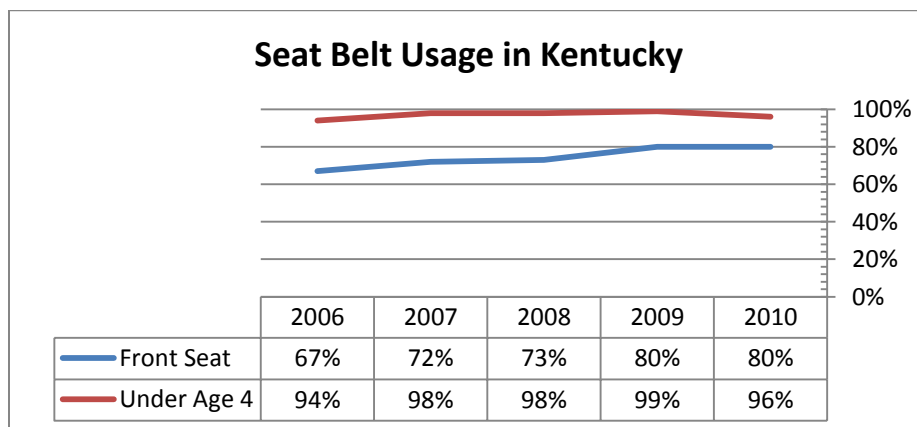


Figure 65. Source: KSP - Traffic Collision Facts: 2010 Report.

Growing anecdotal reports are pointing to the distractions that cell phone usage, particularly texting and particularly among youth, present to drivers. Although distractions are also caused by eating or drinking beverages while driving, adjusting radios and CD players while driving, and other unsafe habits, the addictive nature of texting presents a new challenge to those striving to instill safe driving habits.

UNINTENTIONAL POISONINGS

For 2010, 1,067 Kentuckians died from poisoning and 4,333 Kentuckians were hospitalized. The majority of these were accidental; at least 86 percent of these deaths were accidental. The majority of emergency department visits for poisoning were children under 15 years old, and mostly from drugs and medications.³⁷

FALLS

For 2010, the majority of fatalities and hospitalizations from falls were associated with adults over 65. The fatality rate for males (8.2 per 100,000 population, age-adjusted) was higher than for females (4.5 per 100,000); the hospitalization rates were higher for females (272.7 per 100,000) than males (180.0 per 100,000).³⁷

SUICIDE

The suicide rate rose by 7 percent between 2009 and 2010, increasing from 567 to 605. Firearms were the primary means of completed suicide from 2001 to 2010.³⁷ The suicide rates were higher among males (23.1 per 100,000 population in 2010, age-adjusted) than females (4.8 per 100,000 population). The self-harm hospitalization rate was higher for females (65.8 per 100,000 population in 2010) than males (47.2 per 100,000). Most self-harm emergency department visit and hospitalizations were caused by poisonings. Kentucky residents aged 15-24 were the age group that most frequently visited emergency departments.³⁷ Examining leading causes of death for Kentucky's 15 ADDs, suicides are the 9th or 10th leading cause of death in eight of the fifteen ADDs. For 2009, Vermont, Kentucky, and Mississippi had suicide rates of 13.0, 13.4, and 13.2, respectively, per 100,000 population compared to 11.8 for the U.S.²⁸

VIOLENCE

VIOLENT CRIME

All states have crime; however, Kentucky ranks low (good) in this category, ranking 10th overall for 2012; Vermont was ranked 2nd and Mississippi ranked 16th.⁴⁵ Violent Crime measures the annual number of murders, rapes, robberies and aggravated assaults per 100,000 population. The ranks are based on data from Crime in the United States, Federal Bureau of Investigation, Washington, D.C.

Violent crime reflects an aspect of current U.S. lifestyle and is an indicator of health risk and death. The violent crime rate is dependent upon many factors, not just population; thus when taking action to combat crime, each state must consider its specific circumstances.

Instances of violent crime in the nation and the state have gone down in the last two decades.⁴⁵ Kentucky's violent crime rate peaked in 1996 at 605.3 per 100,000 population and declined to 243 per 100,000 in 2012. During that same period of time, the U.S. rate declined from 716 instances of violent crime per 100,000 population in 1996 to 403.6 per 100,000 population for 2012.⁴⁵ Figure 66 below compares the violent crime rate for the reference states.

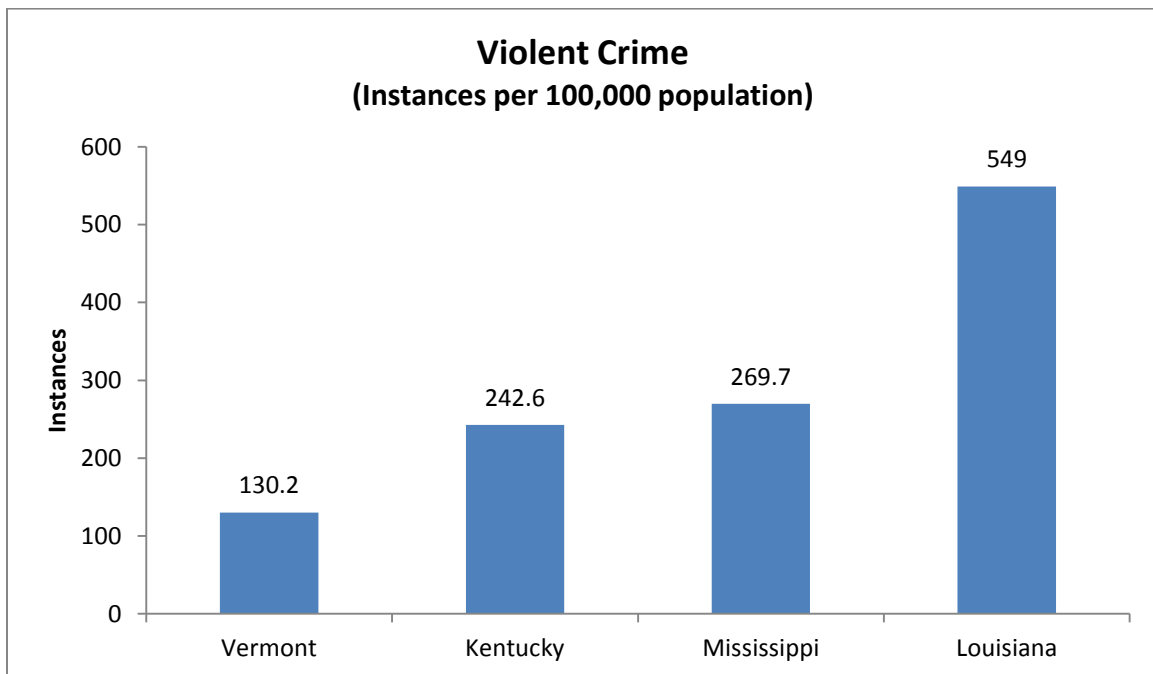


Figure 66. Source: www.americashealthrankings.org, 2012.

Table 26. Kentucky Offense Data			
Crime Classification	2009	2010	% Change
Murder	177	180	+1.69%
Rape	1,567	1,545	-1.40%
Robbery	3,529	3,732	+5.75%
Aggravated Assault	6,382	5,691	-10.83%
Burglary	28,055	29,170	+3.97%
Larceny Theft	73,295	74,185	+1.21%
Auto Theft	6,019	6,075	+0.93%
Arson	761	711	-6.57%
Total	119,785	121,289	+1.26%
Source: KSP - Crime in Kentucky, 2010.			

DOMESTIC VIOLENCE

Domestic violence includes crimes that are committed by one family member/partner against another and include homicide, kidnapping, sex offenses, stalking, and terroristic threatening. In Fiscal Year 2010 (7/1/09 - 6/30/10), there were 19,250 petitions filed in the Administrative Office of the Courts by persons seeking Domestic Violence Protective Orders. Although that number increased to 22,016 petitions in Fiscal Year 2011, the Law Information Network of Kentucky (LINK) saw a decrease of 18.99 percent in the number of Domestic Violence File records. Table 27 below compares FY 2009, FY 2010 and FY 2011. The term 'caution' provides law enforcement officers notice that weapons were involved and the alleged offender is believed to be armed/dangerous.³⁹

Table 27. Domestic Violence Protective Orders			
	FY 2009	FY 2010	FY 2011
Emergency Temporary Orders	19,429	19,324	15,019
Emergency Temporary Orders - Caution	5,931	6,247	5,249
Emergency Protective Orders	7,909	7,501	5,836
Emergency Protective Orders - Caution	3,102	3,342	3,380
Domestic Violence Summons	0	0	0
Total	36,371	36,414	29,498
Source: KSP - Crime in Kentucky, 2010; Crime in Kentucky, 2011.			

INFECTIOUS DISEASE

CHILD MALTREATMENT

Child maltreatment is a serious issue in Kentucky and the nation.²⁴ Only New York and the District of Columbia have child victim rates higher than Kentucky. For 2011, Kentucky's victim rate was 16.4 per 1,000 population compared to 22.6 for New York and 16.9 for D.C. Figure 67 compares the 2011 child victim rate for the reference states.

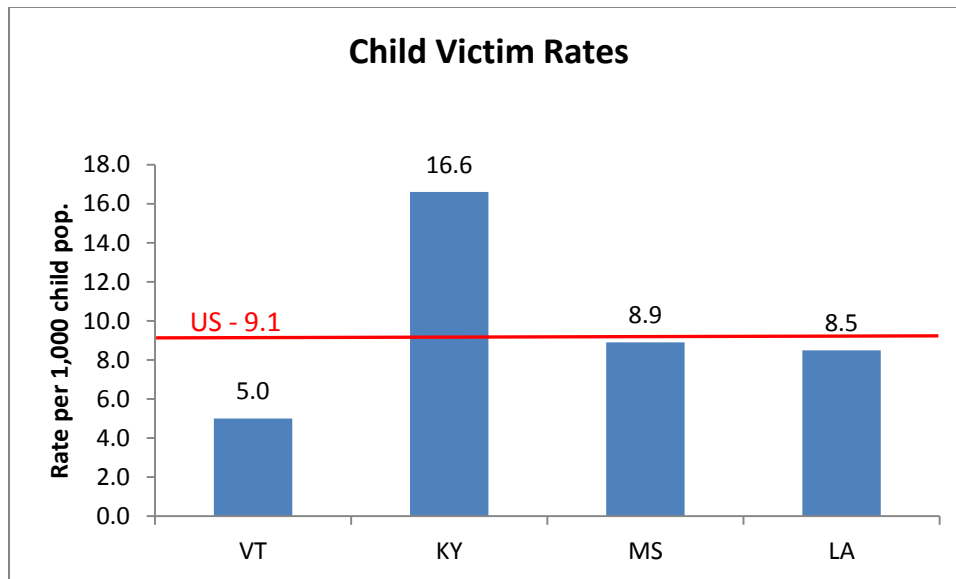


Figure 67. Source: Child Maltreatment, 2011.

The various child maltreatment laws are generally conform to the federal definition, *Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm.* Most states recognize four major types of maltreatment: neglect, physical abuse, psychological maltreatment, and sexual abuse. A child may suffer from multiple forms of maltreatment. For Kentucky and the nation, the greatest percentage of children suffered from neglect. Of the 16,994 child victims in 2011: 96.4 percent suffered neglect compared to 78.5 percent for U.S.; 8.6 percent suffered physical abuse compared to 17.6 percent for the U.S.; 4.0 percent suffered sexual abuse compared to 9.1 percent for the U.S.; and 0.3 percent suffered psychological maltreatment compared to 9.0 percent for the U.S.²⁴

INFECTIOUS DISEASE TRENDS

America's Health Rankings examines infectious disease using the incidence of measles, pertussis, Hepatitis A and syphilis. These diseases represent three modes of transmission. Measles and pertussis are spread by direct contact or airborne droplets from infected individuals. Hepatitis A is spread by the fecal-oral route and outbreaks are often associated with contaminated water or food. Syphilis is spread through sexual contact with an infected person. The incidence of infectious disease is an indication of the toll that infectious disease is placing on the population. Transmission of infectious diseases can often be prevented and controlled through various approaches, including immunization programs, proper hand washing, use of safe cooking practices and other public health programs.⁴⁵

Figure 68 displays data as grouped by America's Health Rankings for infectious disease in Kentucky. These groupings are used to develop a state ranking. Group 1 includes case numbers reported to CDC of AIDS, Tuberculosis and Hepatitis (A & B). Group 2 includes case numbers reported for measles, pertussis, syphilis and Hepatitis A. The graph shows trending downward for Group 1 and trending slightly downward for Group 2 diseases. Kentucky ranks 19th best among the states.⁴⁴ Vermont is ranked 2nd best and Mississippi is ranked 37th. West Virginia leads the nation according to these rankings.

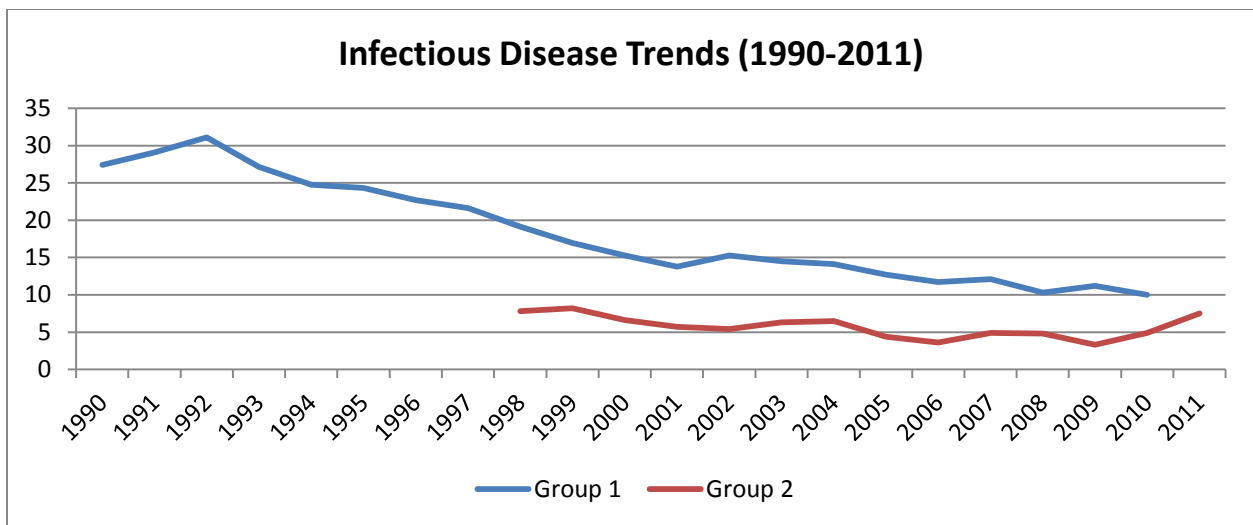


Figure 68. Source: www.americashealthrankings.org, 2011.

Group 1: Number of AIDS, tuberculosis, and Hepatitis (A and B) cases reported to CDC per 100,000 population. Two year average.

Group 2: Number of reported measles, pertussis, syphilis and Hepatitis A cases per 100,000 population. Two year average.

Table 28 below (on two pages) summarizes reportable diseases between 2004 and 2011.

Table 28. Reportable Disease Summary (2004-2011) PAGE 1

Disease Condition	2004 Cases	2004 Crude Rate	2005 Cases	2005 Crude Rate	2006 Cases	2006 Crude Rate	2007 Cases	2007 Crude Rate
Acquired Immunodeficiency Syndrome (AIDS)	211	5.1	176	4.2	212	5.0	242	5.7
Botulism Infant	1	<0.1	1	<0.1	-	-	1	<0.1
Brucellosis	2	<0.1	-	-	1	<0.1	-	-
Campylobacteriosis	273	6.6	288	6.9	250	6.0	283	6.7
Chlamydia	6470	156.4	8351	200.5	8939	212.9	8798	207.7
Cholera	-	-	-	-	-	-	1	<0.1
Cryptosporidiosis	47	1.1	149	3.6	44	1.0	249	5.9
Ehrlichiosis/ Anaplasmosis	2	<0.1	5	0.1	4	0.1	4	0.1
Encephalitis/California	-	-	-	-	-	-	-	-
Encephalitis/St. Louis	-	-	-	-	1	<0.1	-	-
Encephalitis/West Nile Virus	1	<0.1	5	0.1	5	0.1	4	0.1
Gonorrhea	2758	66.7	2935	70.5	3276	78.0	3449	81.4
<i>Haemophilus Influenza, invasive disease</i>	16	0.4	14	0.3	7	0.2	10	0.2
Hansen Disease (Leprosy)	-	-	1	<0.1	-	-	-	-
Hepatitis A	31	0.7	25	0.6	33	0.8	20	0.5
Hepatitis B, Acute	85	2.1	67	1.6	71	1.7	76	1.8
Hepatitis B, Perinatal†	47	-	49	-	49	-	55	-
Hepatitis C, Acute	27	0.7	16	0.4	36	0.9	29	0.7
Histoplasmosis	47	1.1	51	1.2	54	1.3	46	1.1
Influenza A H1N1	-	-	-	-	-	-	-	-
Influenza Virus Isolates	621	-	595	-	508	-	738	-
Legionellosis	44	1.1	33	0.8	48	1.1	50	1.2
Listeriosis	4	0.1	5	0.1	3	0.1	2	<0.1
Lyme Disease	15	0.4	5	0.1	7	0.2	6	0.1
Malaria	5	0.1	10	0.2	4	0.1	9	0.2
Meningococcal disease	18	0.4	20	0.5	11	0.3	14	0.3
Mumps	-	-	-	-	1	<0.1	-	-
Pertussis	98	2.4	157	3.8	61	1.5	47	1.1
Q Fever	6	0.1	2	<0.1	4	0.1	3	0.1
Rabies, Animal	23	0.6	17	0.4	29	0.7	21	0.5
Rocky Mountain spotted fever	3	0.1	3	0.1	3	0.1	5	0.1
Rubella	-	-	1	<0.1	-	-	-	-
Salmonellosis	361	8.7	488	11.7	463	11.0	576	13.6
Shiga Toxin <i>E. Coli</i> (STEC)	41	1.0	76	1.8	101	2.4	123	2.9
Shigellosis	75	1.8	335	8.0	238	5.7	505	11.9
Streptococcal disease, invasive, group A	62	1.5	35	0.8	44	1.0	41	1.0
Streptococcal, toxic shock syndrome	11	0.3	4	0.1	1	<0.1	4	0.1
<i>Streptococcus, pneumoniae invasive drug resistant</i>	32	0.8	35	0.8	39	0.9	29	0.7
Syphilis	151	3.7	129	3.1	188	4.5	90	2.1
Tetanus	2	<0.1	1	<0.1	-	-	-	-
Toxic Shock Syndrome	11	0.3	4	0.1	4	0.1	6	0.1
Toxoplasmosis	1	0.0	1	<0.1	1	<0.1	-	-
Tuberculosis	127	3.1	124	3.0	84	2.0	120	2.8
Tularemia	5	0.1	3	0.1	-	-	1	<0.1
Typhoid	3	0.1	2	<0.1	2	<0.1	-	-
Vibriosis	3	0.1	-	-	2	<0.1	-	-

Source: Kentucky Department for Public Health, Infectious Disease Branch, 2012.

* AIDS Data was not complete for 2011. Unreported cases are not reflected in case numbers or crude rates.

† Perinatal Hepatitis B Cases are listed as the number of infants born to mothers with a positive Hepatitis B surface antigen test results. Due to the inadequate data on the mother, the rates were not calculated.

Table 28. Reportable Disease Summary (2004-2011) PAGE 2

Disease Condition	2008 Cases	2008 Crude Rate	2009 Cases	2009 Crude Rate	2010 Cases	2010 Crude Rate	2011 Cases	2011 Crude Rate
Acquired Immunodeficiency Syndrome (AIDS)	216	5.1	115	2.7	117	2.7	*	*
Botulism Infant	-	-	-	-	-	-	2	<0.1
Brucellosis	-	-	-	-	1	<0.1	-	-
Campylobacteriosis	348	8.2	413	9.6	411	9.5	401	9.2
Chlamydia	12162	284.9	13293	307.9	16376	377.4	16643	380.9
Cholera	-	-	-	-	-	-	2	<0.1
Cryptosporidiosis	36	0.8	67	1.6	85	2.0	177	4.1
Ehrlichiosis/ Anaplasmosis	13	0.3	1	<0.1	17	0.4	16	0.4
Encephalitis/California	1	<0.1	3	0.1	1	<0.1	-	-
Encephalitis/St. Louis	-	-	-	-	-	-	-	-
Encephalitis/West Nile Virus	3	0.1	2	<0.1	2	<0.1	-	-
Gonorrhoea	4548	106.5	3827	88.6	3827	88.2	4531	103.7
<i>Haemophilus Influenza, invasive disease</i>	10	0.2	21	0.5	39	0.9	41	0.9
Hansen Disease (Leprosy)	-	-	-	-	-	-	-	-
Hepatitis A	30	0.7	12	0.3	26	0.6	10	0.2
Hepatitis B, Acute	101	2.4	93	2.2	136	3.1	151	3.5
Hepatitis B, Perinatal†	71	-	51	-	-	-	-	-
Hepatitis C, Acute	68	1.6	64	1.5	109	2.5	142	3.2
Histoplasmosis	42	1.0	32	0.7	42	1.0	52	1.2
Influenza A H1N1	-	-	3082	71.4	423	9.7	-	-
Influenza Virus Isolates	1251	-	1808	41.9	150	3.5	713	16.3
Legionellosis	58	1.4	52	1.2	30	0.7	53	1.2
Listeriosis	7	0.2	7	0.2	9	0.2	4	0.1
Lyme Disease	5	0.1	1	<0.1	5	0.1	3	0.1
Malaria	6	0.1	13	0.3	8	0.2	10	0.2
Meningococcal disease	9	0.2	6	0.1	18	0.4	8	0.2
Mumps	-	-	1	<0.1	1	<0.1	-	-
Pertussis	183	4.3	225	5.2	303	7.0	179	4.1
Q Fever	1	<0.1	2	<0.1	-	-	1	<0.1
Rabies, Animal	45	1.1	46	1.1	21	0.5	16	0.4
Rocky Mountain spotted fever	1	<0.1	1	<0.1	6	0.1	4	0.1
Rubella	-	-	-	-	-	-	-	-
Salmonellosis	484	11.3	453	10.5	587	13.5	606	13.9
Shiga Toxin <i>E. Coli</i> (STEC)	101	2.4	73	1.7	70	1.6	75	1.7
Shigellosis	263	6.2	213	4.9	221	5.1	252	5.8
Streptococcal disease, invasive, group A	45	1.1	42	1.0	206	4.7	141	3.2
Streptococcal, toxic shock syndrome	4	0.1	1	<0.1	14	0.3	5	0.1
<i>Streptococcus, pneumoniae invasive drug resistant</i>	80	1.9	78	1.8	205	4.7	226	5.2
Syphilis	140	3.3	239	5.5	239	5.5	339	7.8
Tetanus	-	-	-	-	1	<0.1	-	-
Toxic Shock Syndrome	2	<0.1	1	<0.1	0	<0.1	2	<0.1
Toxoplasmosis	-	-	2	<0.1	1	<0.1	7	0.2
Tuberculosis	101	2.4	77	1.8	90	2.1	71	1.6
Tularemia	2	<0.1	1	<0.1	2	<0.1	1	<0.1
Typhoid	-	-	-	-	3	0.1	-	-
Vibriosis	2	<0.1	1	<0.1	5	0.1	2	<0.1

Source: Kentucky Department for Public Health, Infectious Disease Branch, 2012.

* AIDS Data was not complete for 2011. Unreported cases are not reflected in case numbers or crude rates.

† Perinatal Hepatitis B Cases are listed as the number of infants born to mothers with a positive Hepatitis B surface antigen test results. Due to the inadequate data on the mother, the rates were not calculated.

TUBERCULOSIS

Tuberculosis (TB) cases have steadily declined in Kentucky from 402 cases in 1992 to 71 in 2011. Figure 69 depicts the decline in numbers of cases and a linear trend line. Figure 70 compares the TB case rates of Kentucky versus the U.S. between 2007 and 2011.³¹

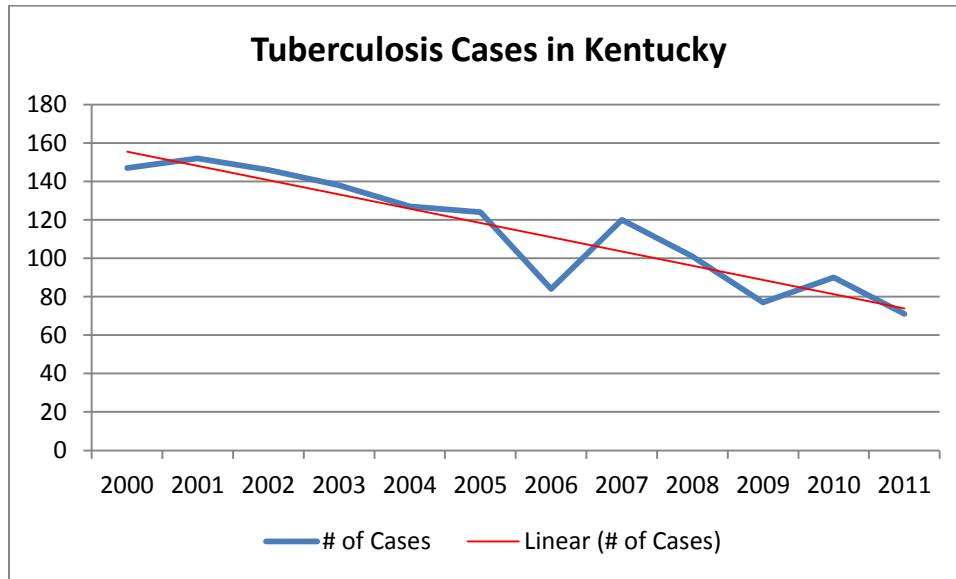


Figure 69. Source: KY Department for Public Health (chfs/ky.gov/dph/epi/tb.htm), 2012.

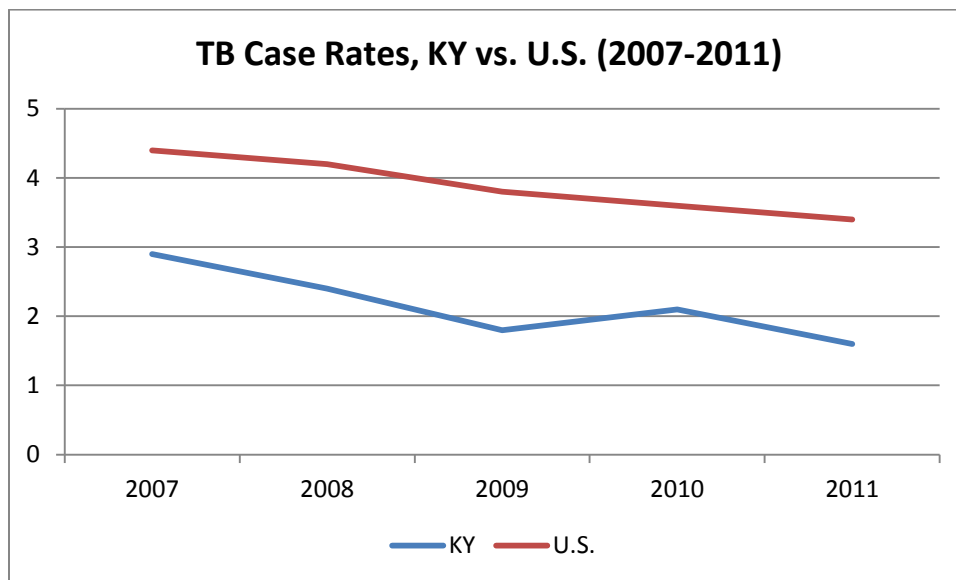


Figure 70. Source: KY Department for Public Health, 2012.

VIRAL HEPATITIS

Case rates for Hepatitis B and Hepatitis C have trended upward between 2004 and 2011, while case rates for Hepatitis A have trended downward (see Figure 71 below). According to the CDC, rates for acute Hepatitis B have decreased in the U.S., Vermont and Mississippi, while increasing by 85 percent in Kentucky for the period 1999-2008.

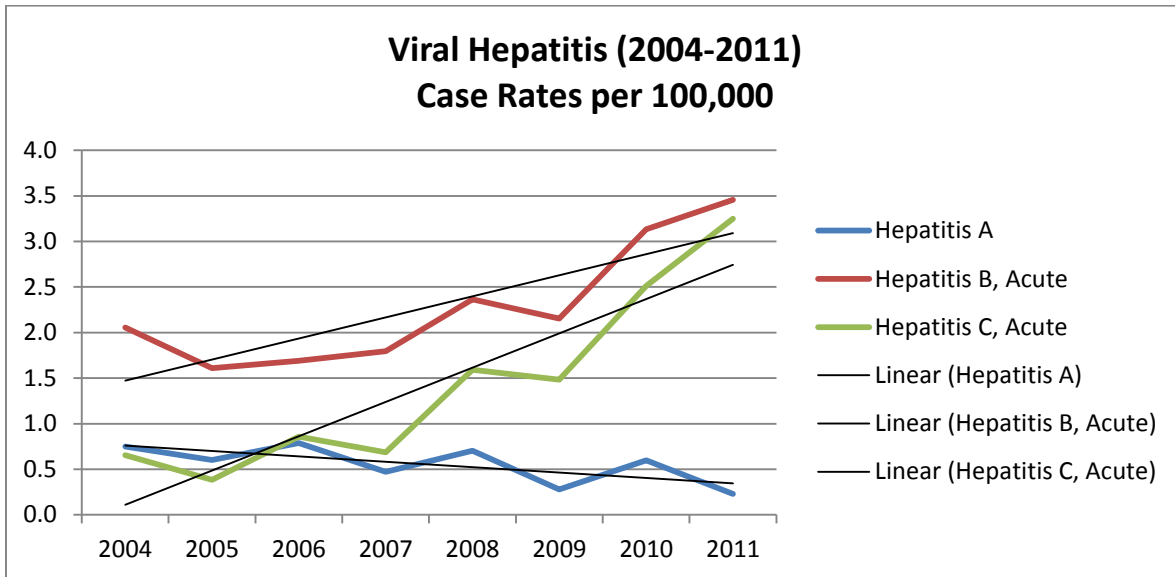


Figure 71. Source: KY Department for Public Health, Reportable Disease Summary, 2012.

SEXUALLY TRANSMITTED INFECTIONS

Figure 72 compares Sexually Transmitted Infection case rates for the U.S. and Kentucky, as well for the healthiest state, Vermont, and the least healthy state, Mississippi. The 2010 comparisons include case rates for Chlamydia, Gonorrhea and Syphilis. Kentucky rates are lower than those of the nation as a whole and Mississippi but higher than Vermont.

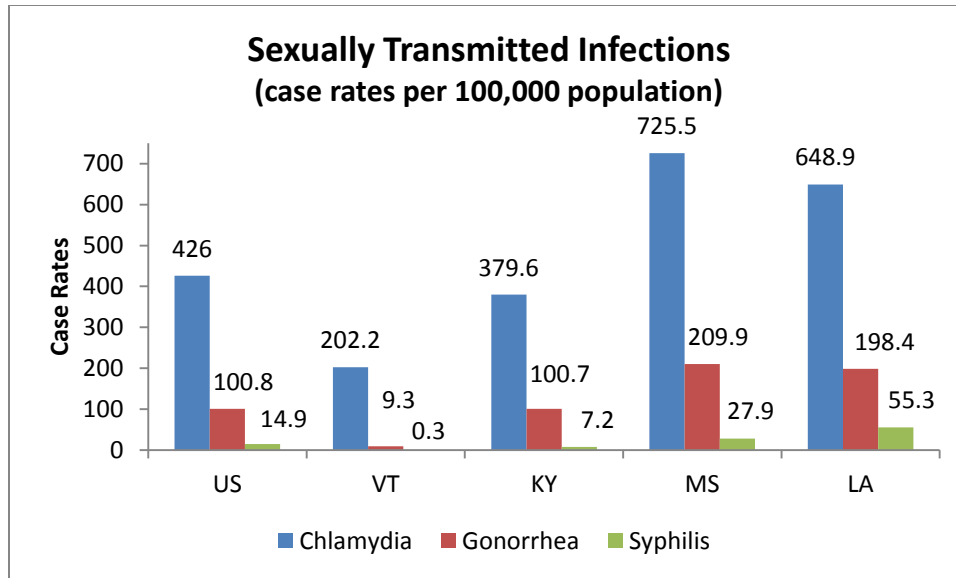


Figure 72. Source: Kaiser – statehealthfacts.org, 2010.

HIV/AIDS

A total of 7,224 HIV infections had been reported to the Kentucky Department for Public Health between 1982 and mid-2010. It is presumed that 63 percent, or 4,468 of these, are still living with a diagnosis of HIV infection or AIDS.³⁴ Table 29 below details those HIV infections diagnosed since 2000 by current status and year of diagnosis.

Year of HIV Diagnosis	# of HIV Infection without AIDS	# of AIDS	Total
2000	92	190	282
2001	87	174	261
2002	86	210	296
2003	88	157	245
2004	122	158	280
2005	176	161	337
2006	169	179	348
2007	231	163	394
2008	215	148	363
2009	241	112	353

Source: KDPH, An Integrated Epidemiologic Profile for HIV/AIDS Prevention and Care Planning for Kentucky, 2010.

In 2009 the majority (80 percent) of newly diagnosed HIV infections were male. By race/ethnicity, white males and females account for the largest percentage of newly diagnosed HIV infections, with 60 percent male and 52 percent female. However, African-Americans were most likely to be impacted by HIV. Although black males and females comprise 7.7 percent and 7.6 percent of Kentucky’s male and female population, respectively, they accounted for 32 percent and 39 percent of newly diagnosed HIV infections, respectively. Additionally, Hispanic males and females comprise 3.0 percent and 2.3 percent of Kentucky’s male and female population, respectively, they account for 7 percent each of newly diagnosed HIV infections.³⁴

The percentage of Kentucky's population reported being tested for HIV was 37.7 percent, compared to the U.S. with 40.3 percent, Vermont with 34.3 percent, and Mississippi with 42.1 percent.

IMMUNIZATION COVERAGE

“Almost 90% of children 19 to 35 months in the United States are immunized. Vaccines protect children from illnesses and death caused by infectious diseases by helping prepare their bodies to fight serious and, at times, deadly diseases. In the U.S., vaccines have reduced or eliminated many infectious diseases that once routinely killed or harmed many infants, children, and adults. However, the viruses and bacteria that cause vaccine-preventable disease and death still exist and can be passed on to people who are not protected by vaccines. Vaccine-preventable diseases have many social and economic costs. Sick children miss school and can cause parents to lose time from work. These diseases also result in doctor's visits, hospitalizations, and even premature deaths.”⁴⁵ Figure 73 below shows Kentucky’s immunization coverage according to America’s Health Rankings.

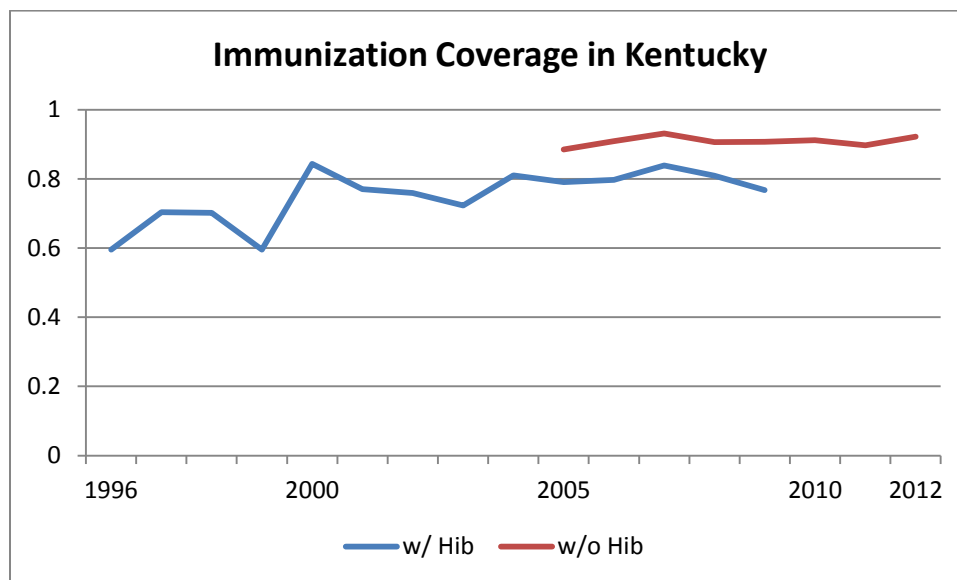


Figure 73. Source: www.americashealthrankings.org, 2012.

America's Health Rankings' data element for "immunization coverage" is calculated by the average of the percentage of children ages 19 to 35 months who have received the following vaccines: Diphtheria, Tetanus, Pertussis (DTP), Poliovirus, Meningococcal conjugate vaccine (MCV) and Hepatitis B Vaccine (HepB). Data was compiled from CDC's National Immunization Program. For 2011, the rankings has Kentucky ranked 31st with 89.7 percent, Vermont ranked as 22nd with 91.2 percent, and Mississippi ranked 10th with 92.7 percent.

Data from CDC's National Immunization Survey for 2011 are presented in the Table 30 below for vaccination coverage consisting of 4 doses of DTaP, 3 or more doses of any poliovirus vaccine, 1 or more doses of measles-mumps-rubella vaccine, 3 or more does of Hib vaccine of any type, 3 or more doses of HepB vaccine, and 1 or more doses of varicella vaccine (Series 4-3-1-3-3-10. In this comparison, Kentucky's estimated vaccination coverage exceeds the percentage for Vermont, Mississippi and the nation.³

Table 30. Estimated Vaccination Coverage*	
Among Children 19-35 Months of Age	
National Immunization Survey, Q1/2011-Q4/2011	
State	Percentage
Vermont	67.5 ±6.6
Kentucky	77.6 ±6.8
Mississippi	67.8 ±7.5
Louisiana	69.6 ±6.7
US National	68.5 ±1.3
Source: CDC, 2011 National Immunization Survey, 2012.	
* Immunization Series 4-3-1-3-3-1	

PUBLIC HEALTH SYSTEM ASSESSMENT

This assessment now examines Kentucky's governmental public health system that has a major role in improving the health status presented in the preceding chapters. Public health provides services that protect, promote, and improve the public's health. These services have been codified into the Ten Essential Public Health Services (10EPHS).

THE TEN ESSENTIAL PUBLIC HEALTH SERVICES

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships and action to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

Figure 74. Source: CDC – The Ten Essential Public Health Services.

Standards for these essential services have been developed for accreditation and performance evaluation. The Public Health Accreditation Board (PHAB) has a set of minimum standards for public health agencies to achieve in order to be accredited. The National Public Health Performance Standards Program (NPHPSP) has developed a set of ideal standards for assessing the public health system.

The public health system, sometimes called the egg map (Figure 75-A), illustrates the concept that multiple agencies work together in creating healthy people and healthy communities. The NPHSP assesses how well this system works together in performing the ten essential public health services.

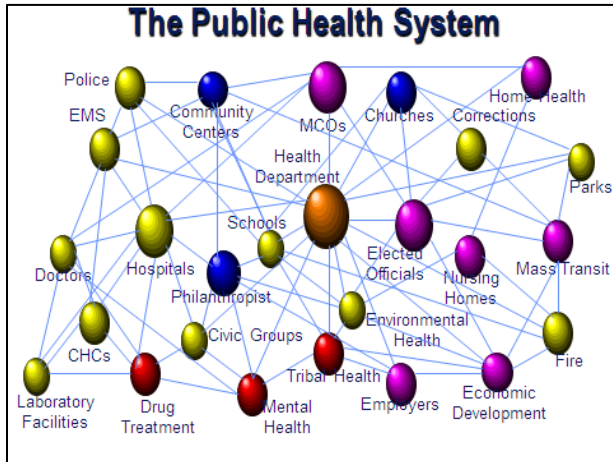


Figure 75-A. Source: CDC – User Guide, NPHSP, 2007.

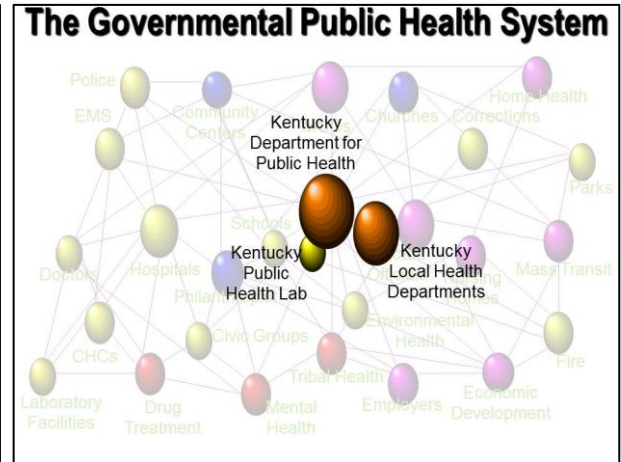


Figure 75-B. Source: KDPH, 2011.

In November, 2011, a select group of state and local public health leaders assessed the performance of only the state and local health departments in Kentucky (Figure 75-B) using the NPHSP State Assessment Instrument. Based upon the responses provided during the assessment, an average was calculated for each of the Essential Services. Each Essential Service score can be interpreted as the overall degree to which Kentucky Public Health meets the performance standards (quality indicators) for each Essential Service. Scores can range from a minimum value of 0% (no activity is performed pursuant to the standards) to a maximum value of 100% (all activities associated with the standards are performed at optimal levels). Figure 76 shows the overall results of this assessment.

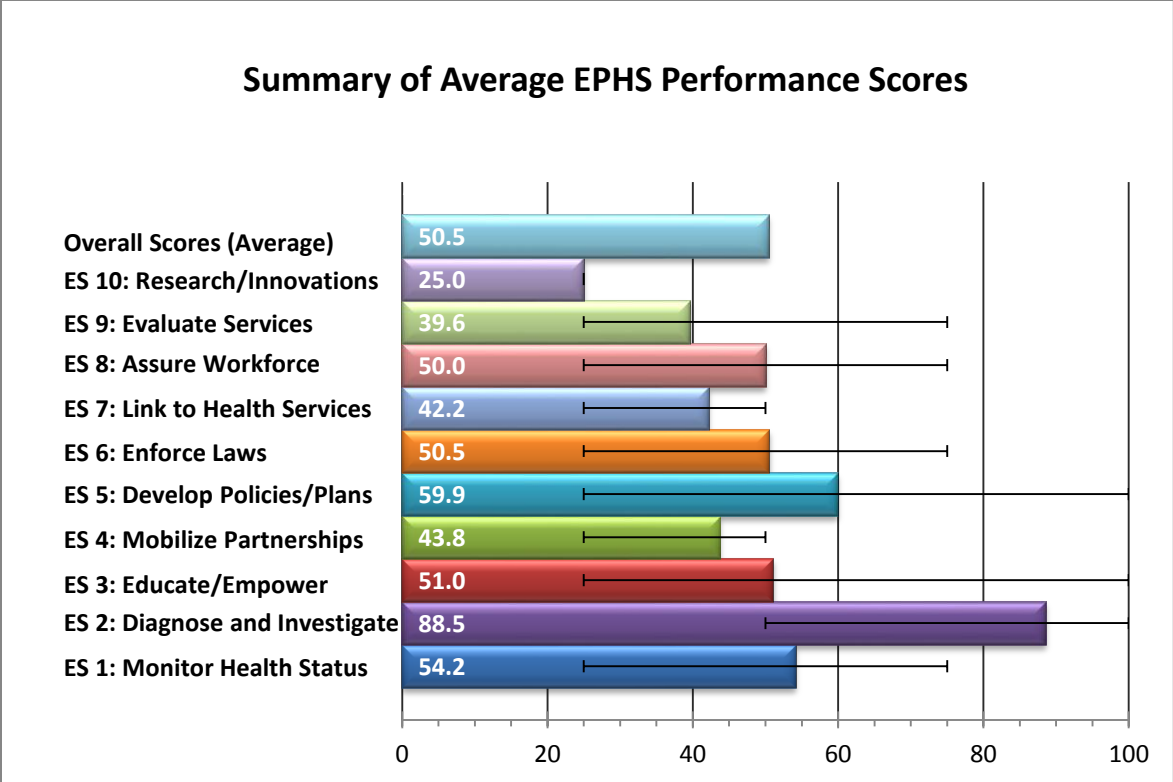


Figure 76. Source: CDC – NPHPSP – KY State Assessment, 2011.

The assessment was organized around four Model Standards, which were included in each of the Ten Essential Public Health Services:

1. Planning and Implementation
2. State – Local Cooperation
3. Performance Management and Quality Improvement
4. Public Health Capacity and Resource

Performance Scores by Essential Service for Each Model Standard

The figures and tables on the following pages display the average score for each of the Model Standards within each Essential Service. Figure 76 displays the average score for each of the Essential Services by Model Standard. This level of analysis enables you to identify specific activities that contributed to high or low performance within each Essential Service. Each score (performance, priority, and contribution scores) at the Essential Service level is a calculated average of the respective Model Standard scores within that Essential Service.

Performance Scores by Essential Service for Each Model Standard

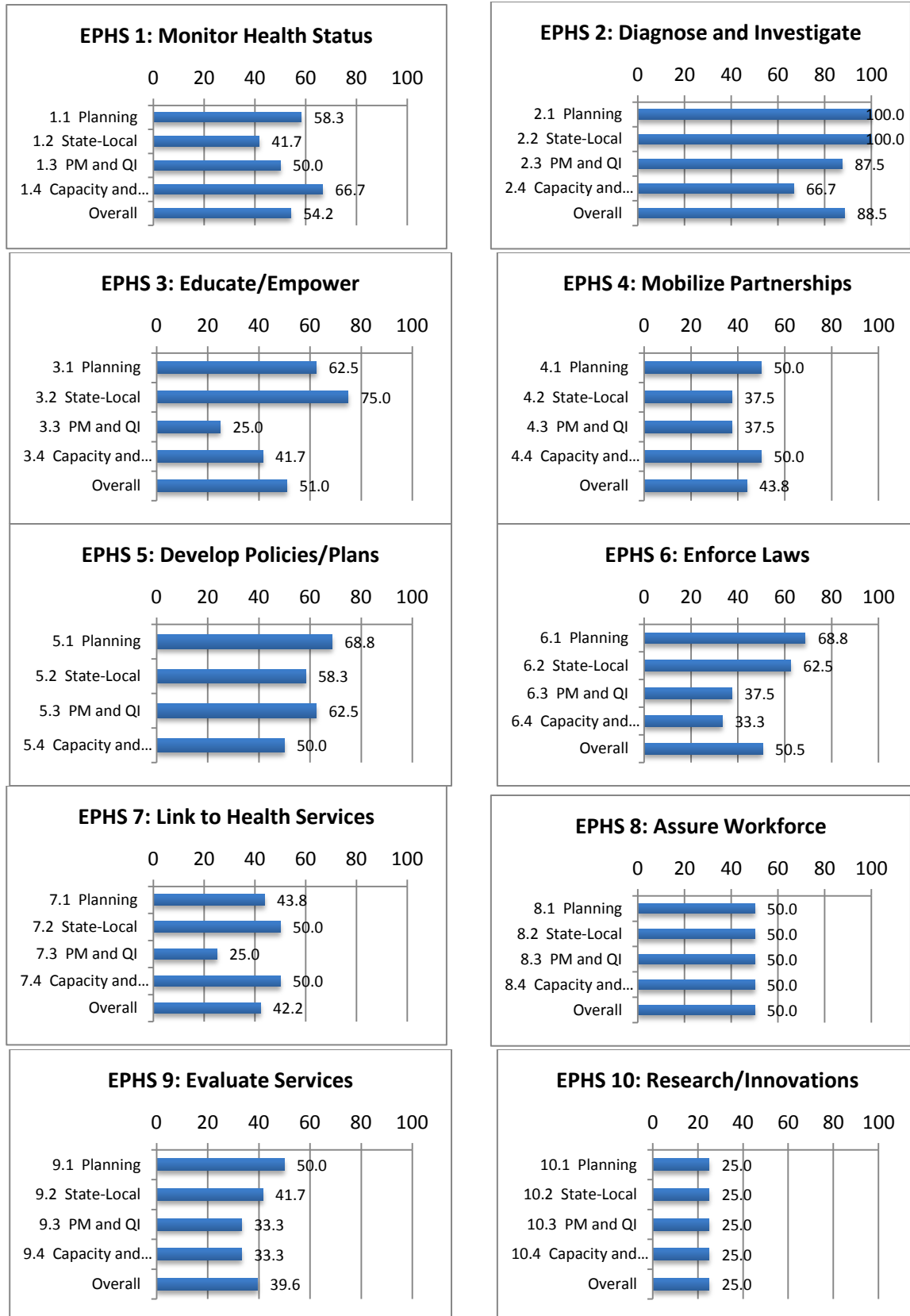


Figure 77. Source: CDC - NPHPSP KY State Assessment, 2011

Performance Scores by Model Standard for each Essential Service

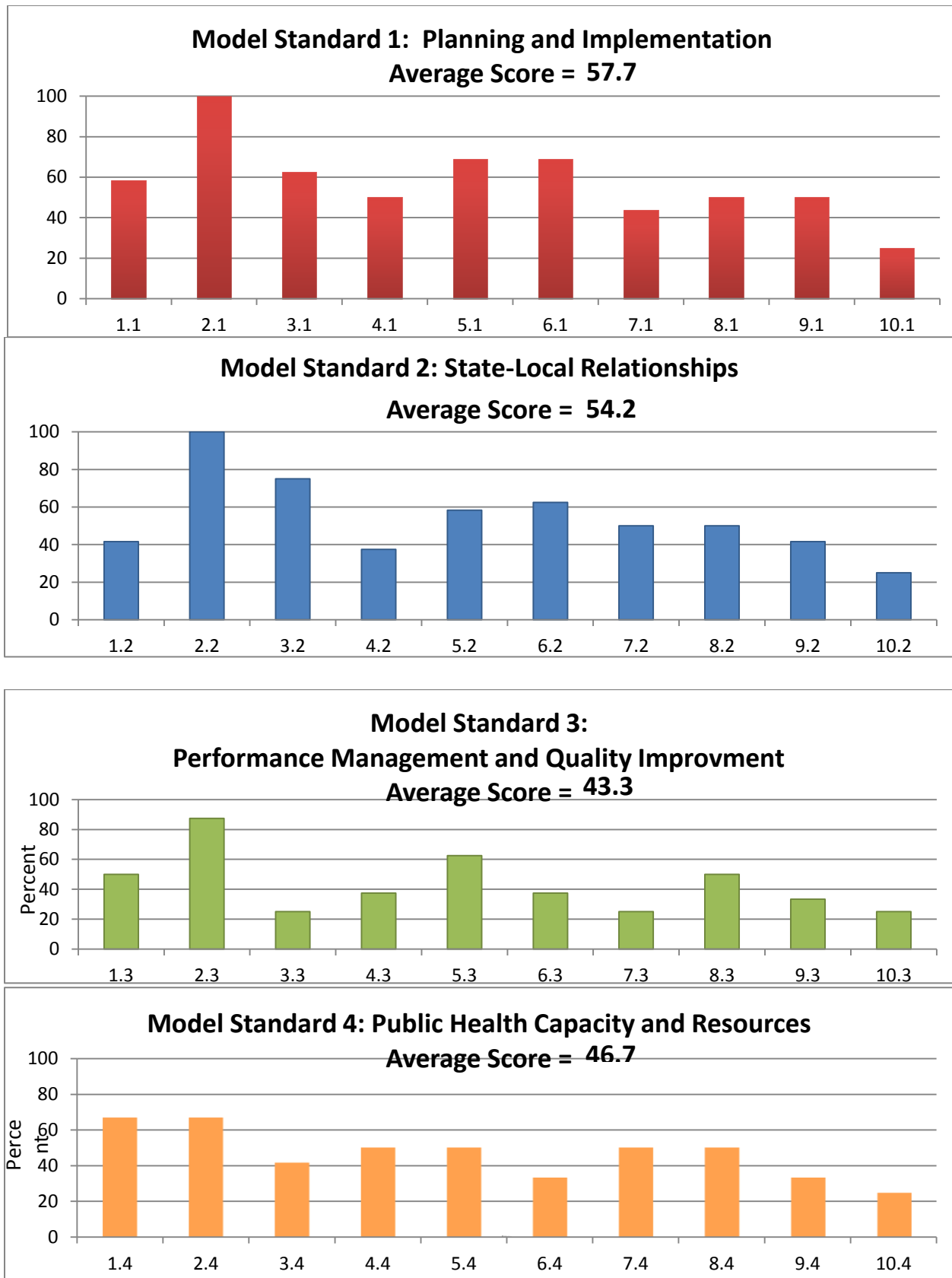


Figure 78. Source: CDC - NPHSP KY State Assessment, 2011

Performance Relative to Optimal Activity

The figures below display the proportion of performance measures that met specified thresholds of achievement for performance standards. The five threshold levels of achievement used in scoring these measures are shown in the legend below. For example, measures receiving a composite score of 76-100% were classified as meeting performance standards at the optimal level. The first pie chart summarizes the composite performance measures for all 10 Essential Services and the second pie chart summarizes the composite measures for all 40 Model Standards.

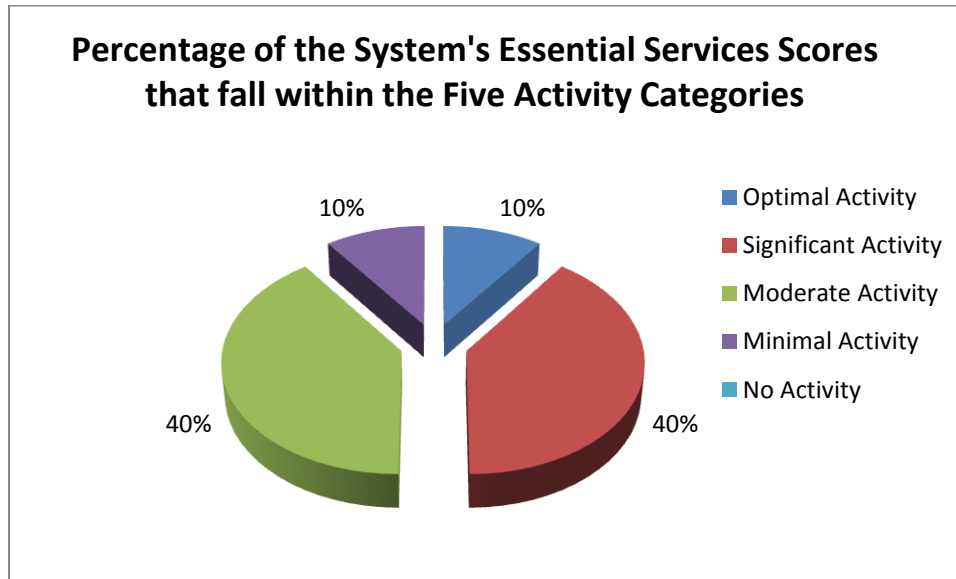


Figure 79. Source: CDC - NPHPSP KY State Assessment, 2011

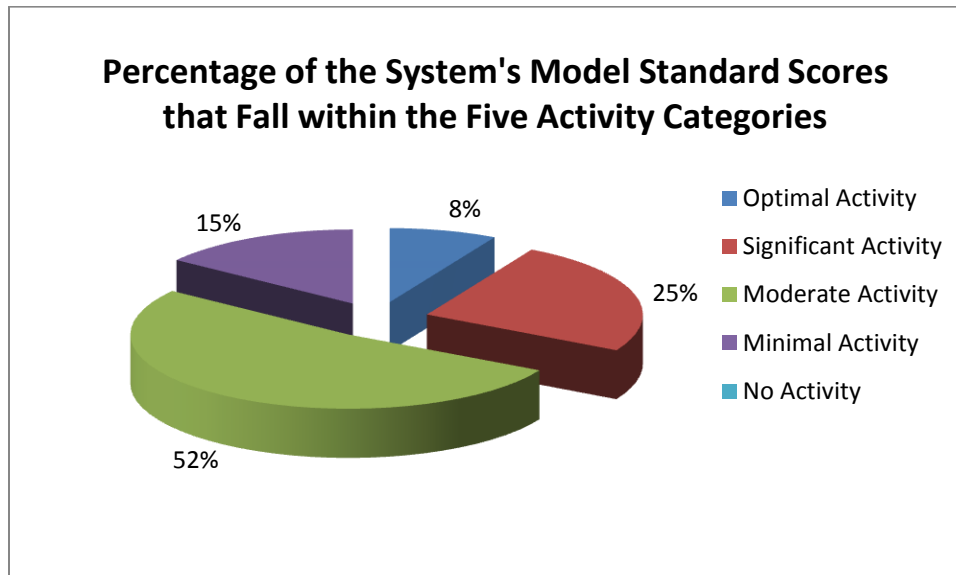


Figure 80. Source: CDC - NPHPSP KY State Assessment, 2011

Section 1 described Kentucky and some selected demographic and socioeconomic characteristics. Kentucky's health care resources were also described. Section 2 described the health status of Kentuckians, including their quality of life from a health perspective, their lifestyle behaviors, preventive health practices, environmental health, social and mental health, maternal and child health, mortality, morbidity, injuries, infectious disease, and status of the public health system. These descriptions were concise; however, one can conclude that the health status of Kentuckians needs to be improved. Kentuckians need to smoke less, eat a more nutritious diet with fewer calories, increase their activity and exercise if safe, and increase preventive health screenings and immunizations. Section 3 introduces some of the activities already started or in planning and some of the recommendations toward improving the health status of Kentuckians.

Kentucky law (KRS 194A.001), Use of the Kentucky Public Health Improvement Plan, clarifies the use and considerations given to Kentucky's blueprint to guide state and local public health departments to plan activities and educate the public, guide health-planning by public and private health providers, and guide key stakeholders in planning their activities. The plan should be considered in health budget decisions and measuring adequacy of funding. The 1998 Kentucky Public Health Improvement Plan (KPHIP) was well developed and executed. The Public Health Accreditation Board (PHAB) requires that a State Health Improvement Plan (SHIP) be updated every 5 years. The 1998 KPHIP – Kentucky's last SHIP – is 14 years old and needs to be updated based on current health status as summarized in this State Health Assessment, the recommendations that are contained here in Section 3, and from input from state and local health department's leaders, key stakeholders, and the citizens of Kentucky.

Section 3 includes the following recommendations from various sources:

- (1) The top ten priorities identified by The Futures Group - a group of public health leaders from the state health department and a select group of local health department leaders from across Kentucky
- (2) A set of recommendations from the Friedell Committee - a private not-for-profit grassroots health advisory group
- (3) A set of goals and objectives developed by a taskforce for Healthy Kentucky 2020
- (4) A set of priorities labeled the Ten Winnable Battles by Dr. Thomas Frieden, CDC Director
- (5) Seven recommended priorities contained in the National Prevention Strategy

THE FUTURES GROUP

Prior to his retirement, Kentucky Public Health Commissioner, William Hacker, M.D. assembled a group of state and local public health leaders to envision public health in 2020. His purpose was to determine what state and local public health departments in Kentucky needed to do to prepare for 2020. A Mobilizing for Action through Planning and Partnerships (MAPP) process was utilized. The following summary information is provided here.

In order to achieve the KDPH Vision of **Healthier People, Healthier Communities**, Kentucky public health and its key partners must develop a set of strategies to help Kentuckians become healthier and Kentucky communities to become healthier. Those strategies will be essential elements of strategic plans and health improvement plans. Considerations should include the following:

BROAD THEMES

1. Quality of Life / Access to Resources / Equity
2. Information and Resource Management
3. Improved Health Status
4. Stronger Relationships
5. Planning
6. Environment

FORCES OF CHANGES

1. Impact of funding reductions
2. Changing federal grant emphasis
3. Community and political support
4. Political impacts
5. Health Care Reform, Accountable Care Organizations (ACO), Medicaid Managed Care (MCO)
6. Increased technology
7. Changing demographics

PRIORITIES FROM HEALTH STATUS ASSESSMENT

- | | |
|---|-------------------------------|
| 1. Access to care | 12. Poverty |
| 2. Obesity Infant Mortality | 13. Infectious Disease |
| 3. Tobacco/ATOD | 14. CVD |
| 4. Teen Pregnancy | 15. Disparities |
| 5. Education Level | 16. Evidenced Based Knowledge |
| 6. Cancer / Diabetes | 17. Built Environment |
| 7. Maternal Child Health | |
| 8. Mental Health | |
| 9. Physical Activity Accident/Injury Prevention | |
| 10. Policy Change | |
| 11. Immunizations | |

PUBLIC HEALTH SYSTEM PERFORMANCE

Each Essential Service score can be interpreted as the overall degree to which Kentucky Public Health meets the performance standards (quality indicators) for each Essential Service. Scores can range from a minimum value of 0% (no activity is performed pursuant to the standards) to a maximum value of 100% (all activities associated with the standards are performed at optimal levels). The following chart shows the overall results of this assessment.

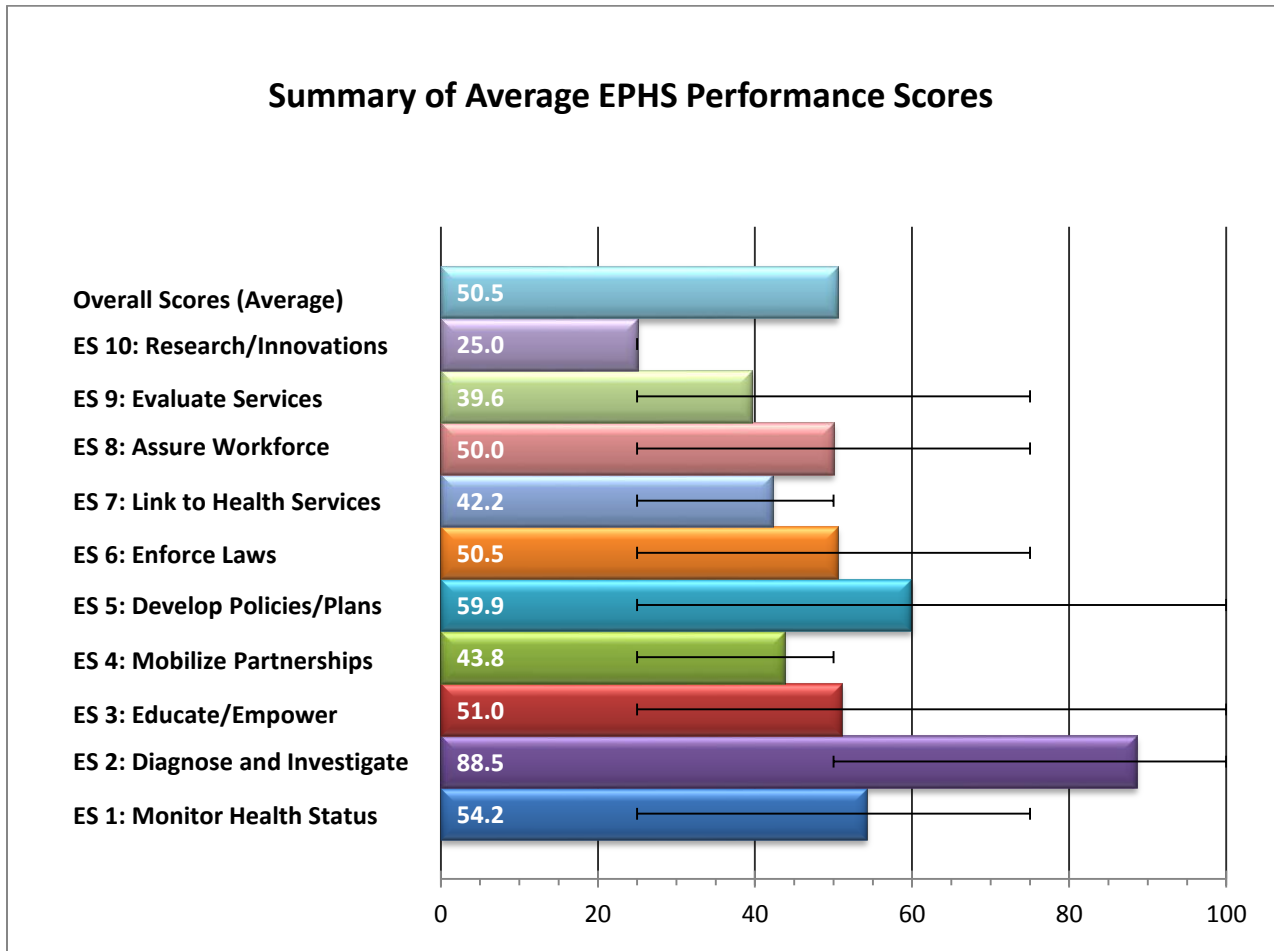


Figure 81. Source: CDC – NPHPSP – KY State Assessment, 2011.

FRIEDEL COMMITTEE RECOMMENDATIONS

The Friedell Committee for Health System Transformation published a report in May, 2012, titled “The Role of Public Health and the Health of the Community: Recommendations for Continuous Performance Improvement.”²³

The recommendations numbered seven; four for Kentucky local boards of health, two for the Kentucky Department for Public Health, and one for small county health departments.

Each local board of health should:

- Develop educational programs and strategies for local boards and promote their regular use, consistent with national performance standards and accreditation requirements.
- Assume responsibility for educating their population about improving their health status, including oral and mental health.
- Get educational content into **every** board meeting in collaboration with the Kentucky Department for Public Health.
- Track progress of their strategic plan and the health status of the population they serve. This should be done in collaboration with Kentucky Department for Public Health.

The Department for Public Health should:

- Develop state requirements and **accountability** for results/outcomes, use of resources, tracking health status indicators and relevant strategic planning, consistent with national performance standards and accreditation requirements.
- Encourage a local role for academic public health programs across Kentucky through discussions with the academic community.

In addition:

- Small county health departments should collaborate regionally to decrease overhead and optimize effectiveness of use of available resources

TEN WINNABLE BATTLES

Under the leadership of its Director, Thomas R. Frieden, MD, MPH, the Centers for Disease Control and Prevention has chosen a set of Winnable Battles to focus an agenda for improving health status. The ten are identified in Figure 81. The battle areas were initiated to achieve measurable impact quickly in a few targeted areas. CDC's Winnable Battles are public health priorities with large-scale impact on health and with known, effective strategies to address them.

According to CDC, "The current Winnable Battles have been chosen based on the magnitude of the health problems and our ability to make significant progress in improving outcomes. By identifying priority strategies and clear targets and by working closely with our public health partners, we can make significant progress in reducing health disparities and the overall health burden from these diseases and conditions."²²

Winnable Battle Areas

- **Food Safety**
- Global Immunization
- **Healthcare-associated Infections**
- **HIV in the U.S.**
- Lymphatic Filariasis in the Americas
- **Motor Vehicle Injuries**
- **Nutrition, Physical Activity, and Obesity**
- Mother-to-Child Transmission of HIV and Syphilis Globally
- **Teen Pregnancy**
- **Tobacco**

Battle areas in bold represent a domestic agenda

Figure 82. Source: CDC – Winnable Battles, 2012.

The following are CDC's description of the battle for success in these ten areas. Note that the seven battle areas for domestic agenda are in bold.

FOOD SAFETY

Foodborne diseases affect tens of millions of people and kill thousands in the United States each year. They also cause billions of dollars in healthcare-related and industry costs annually.

CDC has identified reducing foodborne diseases as a winnable battle. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we will have a significant impact on our nation's health.

GLOBAL IMMUNIZATION

Increased immunization coverage around the world is a key reason why the number of children dying each year has fallen below 10 million for the first time in documented history. CDC is working to achieve and sustain several global immunization initiatives:

- Eradicating polio
- Achieving a global reduction of deaths resulting from measles and rubella
- Ending epidemic meningitis in Sub-Saharan Africa
- Accelerating the introduction of pneumococcal and rotavirus vaccines
- Strengthening immunization systems in key countries through technical assistance, monitoring and evaluation, social mobilization, and vaccine distribution

HEALTHCARE ASSOCIATED INFECTIONS

At any given time, about 1 in every 20 patients has an infection related to their hospital care. HAIs not only affect patient lives, but also add to our growing healthcare costs.

CDC has identified eliminating HAIs as a winnable battle. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we can have a significant impact on our nation's health.

HIV IN THE U.S.

There are more than 1 million people living with HIV in the United States, and more than 50,000 become newly infected each year. Yet as many as one in five Americans living with HIV are unaware of their infection.

CDC has identified HIV prevention as a winnable battle. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we will have a significant impact on our nation's health.

LYMPHATIC FILARIASIS IN THE AMERICAS

Lymphatic filariasis (LF) is a disabling parasitic disease caused by worms that are spread from person-to-person by the bite of infected mosquitoes. More than 120 million persons are infected with LF, a disease that can be eliminated. CDC and its partners provide assistance to Ministries of Health to protect people from LF through community mobilization, distribution of effective drugs, and program monitoring and evaluation, with a goal of eliminating LF from the Americas.

With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we can eliminate LF from the Americas. The information below provides a snapshot of the context and background for this priority area.

MOTOR VEHICLE INJURIES

In the United States, motor vehicle-related injuries are the leading cause of death for people age 5-34. Worldwide, road traffic crashes are the leading cause of death for people between the ages of 15 and 29. The Centers for Disease Control and Prevention (CDC) is using science to better understand this problem and develop programs and policies that will change behavior to keep drivers, passengers, bicyclists, and pedestrians safe on the road every day.

CDC has identified motor vehicle crashes as a winnable battle. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we will have a significant impact on people's health at home and abroad.

NUTRITION, PHYSICAL ACTIVITY, AND OBESITY

Overweight and obesity are among the most urgent health challenges facing our country today. Excess weight contributes to many of the leading causes of death in the United States, including heart disease, stroke, diabetes, and some types of cancer. More than a third of adults in the U.S. – over 72 million people – and 17% of children in the U.S. are obese. From 1980 to 2000, obesity rates for adults doubled and rates for children tripled.

CDC has identified obesity, nutrition, and physical activity as winnable battles. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we will have a significant impact on our nation's health.

MOTHER-TO-CHILD TRANSMISSION OF HIV AND SYPHILIS GLOBALLY

Every year, approximately 370,000 babies are born with HIV, mostly in sub-Saharan Africa. Without treatment, more than half of these children will die before the age of 2. Through key interventions, such as routinely testing pregnant women for HIV, providing antiretroviral medications to HIV-infected pregnant women and their exposed infants, and promoting safe infant feeding practices, mother-to-child transmission of HIV can be decreased from about 35% to less than 5%.

Another prominent cause of infant mortality is untreated maternal syphilis, which still accounts for more than 500,000 stillbirths and infant deaths annually despite the fact that these deaths could be prevented through routine detection and treatment of syphilis during antenatal care.

CDC is a leader in the global efforts to substantially reduce mother-to-child transmission of HIV and congenital syphilis. CDC is supporting several countries, through the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) program, to scale up interventions to prevent mother-to-child transmission of HIV.

Winnable battle goals for CDC in 13 high burden African countries include:

- Increasing the percentage of pregnant women who receive HIV testing and counseling
- Increasing the percentage of HIV-infected pregnant women who receive antiretroviral medications

Additionally, in one country, CDC is supporting the integration of services to prevent mother-to-child transmission of both HIV and syphilis. Use of rapid point-of-care testing for both HIV and syphilis during the antenatal care visit ensures that, before leaving the clinic, women found to have HIV are provided antiretroviral medications and women found to have syphilis are treated.

Through the enhancement of existing antenatal data collection systems, program outcomes and maternal and infant health impact will be monitored and evaluated for both broad PMTCT scale-up and focused, integrated service provision.

TEEN PREGNANCY

In 2009, the number of births to teenage mothers was 409,840 — a birth rate of 39.1 per 1,000 women aged 15 to 19. This indicates that the long-term downward trend in teen birth rates has resumed.

CDC has identified teen pregnancy prevention as a winnable battle. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we will have a significant impact on our nation's health.

TOBACCO

Tobacco use is a major preventable cause of premature death and disease worldwide. Currently, approximately 5.4 million people around the world die each year due to tobacco-related illnesses. In the United States, an estimated 46.6 million people – about one in five adults – currently smoke, and an estimated 443,000 people die prematurely from diseases caused by smoking or second-hand smoke exposure.

CDC has identified reducing tobacco use as a winnable battle. With additional effort and support for evidence-based, cost-effective strategies that we can implement now, we will have a significant impact on our nation's health at home and abroad.

NATIONAL PREVENTION STRATEGY

In June, 2011, Dr. Regina Benjamin, U.S. Surgeon General presented the nation's first ever National Prevention and Health Promotion Strategy (National Prevention Strategy). The strategy is a health improvement plan for the nation and will move the U.S. "from a system of sick care to one based on wellness and prevention."⁴³ The strategy proposes general objectives for each of the topics.

FOUR STRATEGIC DIRECTIONS

1. Healthy and Safe Community Environment
 - a) Improve quality of air, land, and water.
 - b) Design and promote affordable, accessible, safe and healthy housing.
 - c) Strengthen state, tribal, local and territorial public health departments to provide essential services.
 - d) Integrate health criteria into decision making, where appropriate, across multiple sectors.
 - e) Enhance cross-sector collaboration in community planning and design to promote health and safety.
 - f) Expand and increase access to information technology and integrated data systems to promote cross-sector information exchange.
 - g) Identify and implement strategies that are proven to work and conduct research where evidence is lacking.
 - h) Maintain a skilled, cross-trained, and diverse prevention workforce.
2. Clinical and Community Prevention Services
 - a) Support the National Quality Strategy's focus on improving cardiovascular health.
 - b) Use payment and reimbursement mechanisms to encourage delivery of clinical preventive services.
 - c) Expand use of interoperable health information technology.
 - d) Support implementation of community-based preventable services and enhance linkages with clinical care.
 - e) Reduce barriers to accessing clinical and community preventive services, especially among populations at greatest risk.
 - f) Enhance coordination and integration of clinical, behavioral, and complementary health strategies.
3. Empowered People
 - a) Provide people with tools and information to make healthy choices.
 - b) Promote positive social interactions and support healthy decision making.
 - c) Engage and empower people and communities to plan and implement prevention policies and programs.
 - d) Improve education and employment opportunities.

4. Elimination of Health Disparities
 - a) Ensure a strategic focus on communities at greatest risk.
 - b) Reduce disparities in access to quality health care.
 - c) Increase the capacity of the prevention workforce to identify and address disparities.
 - d) Support research to identify effective strategies to eliminate health disparities.
 - e) Standardize and collect data to better identify and address disparities.

SEVEN PUBLIC HEALTH PRIORITIES

1. Tobacco Free Living

- a) Support comprehensive tobacco free and other evidence-based tobacco control policies.
- b) Support full implementation of the 2009 Family Smoking Prevention and Tobacco Control Act.
- c) Expand use of tobacco cessation services.
- d) Use media to educate and encourage people to live tobacco free.

2. Preventing Drug Abuse and Excessive Alcohol Use

- a) Support state, tribal, local, and territorial implementation and enforcement of alcohol control policies.
- b) Create environments that empower young people not to drink or use other drugs.
- c) Identify alcohol and other drug abuse disorders early and provide brief intervention, referral and treatment.
- d) Reduce inappropriate access to and use of prescription drugs.

3. Healthy Eating

- a) Increase access to healthy and affordable foods in communities.
- b) Implement organizational and programmatic nutrition standards and policies.
- c) Improve nutritional quality of food supply.
- d) Help people recognize and make healthy food and beverage choices.
- e) Support policies and programs that promote breastfeeding.
- f) Enhance food safety.

4. Active Living

- a) Encourage community design and development that supports physical activity.
- b) Promote and strengthen school and early learning policies and programs that increase physical activity.
- c) Facilitate access to safe, accessible, and affordable places for physical activity.
- d) Support workplace policies and programs that increase physical activity.
- e) Assess physical activity levels and provide education, counseling, and referrals.

5. Injury and Violence Free Living

- a) Implement and strengthen policies and programs to enhance transportation safety.
- b) Support community and streetscape design that promotes safety and prevents injuries.
- c) Promote and strengthen policies and programs to prevent falls, especially among older adults.
- d) Promote and enhance policies and programs to increase safety and prevent injury in the workplace.
- e) Strengthen policies and programs to prevent violence.
- f) Provide individuals and families with the knowledge, skills, and tools to make safe choices that prevent violence and injuries.

6. Reproductive and Sexual Health

- a) Increase use of preconception and prenatal care.
- b) Support reproductive and sexual health services and support services for pregnant and parenting women.
- c) Provide effective sexual health education, especially for adolescents.
- d) Enhance early detection of HIV, viral hepatitis, and other STIs and improve linkage to care.

7. Mental and Emotional Well-Being

- a) Promote positive early childhood development, including positive parenting and violence-free homes.
- b) Facilitate social connectedness and community engagement across the lifespan.
- c) Provide individuals and families with the support necessary to maintain positive mental well-being.
- d) Promote early identification of mental health needs and access to quality services.

HEALTH KENTUCKIANS 2020 PLAN

The Healthy Kentuckians 2020 (HK 2020) Plan is being finalized. Components of HK 2020 will be a section within our state health improvement plan with benchmarks as indicators on how we are improving the health of all Kentuckians over the next decade. Program leads and objectives are identified. This comprehensive document mirrors CDC's Healthy People 2020 to a large degree.

1. **Access to Health Services**
GOAL: Improve access to comprehensive, quality health care services.
2. **Adolescent Health**
GOAL: Increase the number of adolescents who are healthy, have a sense of well-being and are prepared for adulthood.
3. **Arthritis, Osteoporosis, and Chronic Back Conditions**
GOAL: Prevent illness and disability related to arthritis and other rheumatic conditions, osteoporosis, and chronic back conditions.
4. **Cancer**
GOAL: Reduce the number of new cancer cases, as well as the illness, disability and death caused by cancer.
5. **Dementias, Including Alzheimer's Disease**
GOAL: Reduce morbidity and costs associated with, and maintain or enhance the quality of life for persons with dementias including Alzheimer's disease
6. **Diabetes**
GOAL: Reduce the disease and economic burden of diabetes mellitus (DM) and improve the quality of life for all persons who have, or are at risk for DM.
7. **Disability and Health**
GOAL: Promote the health and well-being of persons with disabilities.
8. **Early and Middle Childhood**
GOAL: Increase the proportion of Kentucky children who reach their maximal healthy development.
9. **Educational and Community-Based Programs**
GOAL: Increase the percent of elementary, middle, and senior high school districts that provide comprehensive school health education to prevent tobacco use and addiction.
10. **Environmental Health**
GOAL: Promote health for all through a healthy environment.
11. **Family Planning**
GOAL: Provide publicly funded birth control and reproductive health services to more low income, disparate women, men and teens to assist in planning the timing and spacing of pregnancy for improved maternal child outcomes and increase socioeconomic conditions.

12. **Food Safety**
GOAL: Reduce the number of food borne illnesses.
13. **Healthcare-Associated Infections**
GOAL: To improve the timeframe for reporting of outbreaks in healthcare facilities.
14. **Heart Disease and Stroke**
GOAL: Improve cardiovascular health and quality of life through prevention, detection and treatment for heart disease and stroke and their risk factors.
15. **HIV**
GOAL: Kentucky will become a place where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity, or socio-economic circumstance, will have unlimited access to high-quality life extending care, free from stigma and discrimination.
16. **Immunization**
GOAL: Increase vaccination coverage levels of children aged 19 to 35 months in Kentucky.
17. **Infectious Disease**
GOAL: Decrease disease reporting timelines, improve documentation of outbreak investigations, and decrease the incidence of acute viral hepatitis in KY.
18. **Injury and Violence Prevention**
GOAL: To reduce the incidence and severity of injuries from unintentional causes, as well as death and disabilities due to violence.
19. **Lesbian, Gay, Bisexual and Transgender Health Issue**
GOAL: Improve the health, safety and well-being of lesbian, gay, bisexual and transgender (LGBT) individuals.
20. **Maternal, Infant and Child Health**
GOAL: Improve maternal health and pregnancy outcomes and reduce the rate of morbidity/mortality in infants, thereby improving the health and well-being of women, infants, children, and families in the Commonwealth of Kentucky.
21. **Mental Health and Mental Disorders**
GOAL: Improve the mental health of all Kentuckians by ensuring that appropriate, high-quality services are provided to those with behavioral health needs, particularly those that rely on the publicly funded systems of care for children and adults.
22. **Nutrition and Weight Status**
GOAL: Promote health and reduce chronic disease through the consumption of healthy diets and achievement and maintenance of healthy body weights.
23. **Occupational Safety and Health**
GOAL: Promote worker health and safety through prevention and early intervention
24. **Older Adults**
GOAL: Improve the health, function and quality of life for older adults.

25. **Oral Health**
GOAL: Reduce Kentucky oral health disparities; identify evidence-based strategies and improve access to preventive services and dental care.
26. **Physical Activity**
GOAL: Improve health, fitness, and quality of life through physical activity.
27. **Preparedness**
GOAL: Improve state and local public health jurisdictions' preparedness response to bioterrorism, outbreaks of infectious disease, and other public health threats and emergencies.
28. **Public Health Infrastructure**
GOAL: To ensure that State and local health agencies have the necessary infrastructure to effectively provide essential public health services.
29. **Respiratory**
GOALS: Raise public awareness about the signs and symptoms of lung disease (mainly asthma and chronic obstructive Pulmonary Disease) so people know what to do when they experience respiratory distress, and promote lung health through detection, treatment, and education.
30. **Sexually Transmitted Diseases**
GOAL: Promote healthy sexual behaviors, strengthen community capacity, and increase access in to prevent sexually transmitted diseases (STDs) and their complications.
31. **Social Determinants of Health**
GOAL: Create social and physical environments that promote good health for all.
32. **Tobacco Use**
GOAL: Reduce the burden of tobacco-related addiction, disease and mortality, thereby improving the health and well-being of adults and youth in Kentucky. To improve public health by decreasing adult tobacco use, reducing tobacco use among pregnant women, preventing youth tobacco use and promoting cessation, eliminating exposure to secondhand smoke, promoting systems changes for tobacco cessation, and building capacity and empowering communities for tobacco use prevention and cessation.

REFERENCES

1. American College of Obstetricians and Gynecologists. 2013. *Reducing Your Risk of Cancer*. Retrieved on February 28, 2013 from www.acog.org.
2. Cabinet for Health and Family Services. 2011. 2010 Kentucky Annual Hospital Utilization and Service Report.
3. Centers for Disease Control and Prevention, Immunization Coverage in the U.S. 2012. 2011 Table Data, Retrieved on November 16, 2012 from www.cdc.gov/vaccines/stats-surv/nis/data/tables_2011.htm#overall.
4. Centers for Disease Control and Prevention, National Center for Health Statistics. 2012. *Health, United States, 2011*.
5. Centers for Disease Control and Prevention, National Center for Health Statistics. 2008. *Health, United States, 2007*.
6. Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Viral Hepatitis Surveillance – United States, 2010. Downloaded from <http://www.cdc.gov/hepatitis/Statistics/index.htm> on December 3, 2012.
7. Centers for Disease Control and Prevention. 2012. *National Vital Statistics Reports (Vol 60 No 4) Deaths: Preliminary Data for 2010*.
8. Centers for Disease Control and Prevention. Breast Cancer. Retrieved on February 28, 2013 from www.cdc.gov/cancer/breast/.
9. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. Available at www.cdc.gov/brfss/.
10. Centers for Disease Control and Prevention. Cervical Cancer. Retrieved on July 2, 2012 from www.cdc.gov/cancer/knowledge.
11. Centers for Disease Control and Prevention. Cervical Cancer. Retrieved on February 28, 2013 from www.cdc.gov/cancer/statistics.
12. Centers for Disease Control and Prevention. 10 Essential Public Health Services. Retrieved on July 2, 2012 from www.cdc.gov/nphpsp/essentialservices.html.
13. Centers for Disease Control and Prevention. 2007. User Guide, National Public Health Performance Standards Program.
14. Centers for Disease Control and Prevention. 2008. *National Vital Statistics Reports (Vol 56 No 10), Deaths: Final Data for 2005*.
15. Centers for Disease Control and Prevention. 2009. Fourth National Report on Human Exposure to Environmental Chemicals.
16. Centers for Disease Control and Prevention. 2011. *MMWR 2011; 60(Suppl): Mental Illness Surveillance Among Adults in the United States*.
17. Centers for Disease Control and Prevention. 2011. Breastfeeding Report Card, United States, 2011.
18. Centers for Disease Control and Prevention. 2012. National Public Health Performance System Program - Kentucky State Assessment.

19. Centers for Disease Control and Prevention. 2013. High Blood Pressure and Cholesterol: Out of Control in U.S. Retrieved from www.cdc.gov/features/vitalsigns/cardiovascularisease on March 11, 2013.
20. Centers for Disease Control and Prevention. Health Related Quality of Life. Retrieved on July 12, 2012 from www.cdc.gov/hrqol/concept.htm.
21. Centers for Disease Control and Prevention. National Program of Cancer Registries. Retrieved on March 20, 2013 from <http://apps.nccd.cdc.gov/uscs/>.
22. Centers for Disease Control and Prevention. Winnable Battles. Retrieved on July 2, 2012 from <http://www.cdc.gov/WinnableBattles/index.html>.
23. Friedell Committee. 2012. The Role of Public Health and the Health of the Community: Recommendations for Continuous Performance Improvement.
24. Health and Human Services, Children's Bureau, Child Maltreatment, 2011, Available from www.acf.hhs.gov/sites/default/files/cb/cm11.pdf.
25. Health and Human Services, Community Health Status Reports, 2009. Available from www.communityhealth.hhs.gov.
26. Health Resources and Services Administration. 2011. Primary Care Health Professional Shortage Areas Designated on September 1, 2011.
27. Humbaugh, Dr. Kraig. PowerPoint Presentation at November 2012 TB Conference, Cumberland Falls State Resort Conference Center, 2012.
28. Kaiser Family Foundation. 2012. State Health Facts. Available from www.statehealthfacts.org
29. Kentucky Cancer Registry at the University of Kentucky. 2013. Available from <http://www.kcr.uky.edu>.
30. Kentucky Department for Public Health, Division of Epidemiology and Health Planning, Infectious Disease Branch. Reportable Disease Summary (2004-2011)/RDS_Summary_2004-2011.xls, 2012.
31. Kentucky Department for Public Health, Division of Epidemiology and Health Planning, Infectious Disease Branch. TB Cases by County Reports downloaded from www.chfs.ky.gov/dph/epi/tb.htm on November 19, 2012.
32. Kentucky Department for Public Health. 2005. Leading and Selected Causes of Resident Death, 2005. Available from www.chfs.ky.gov/dph/epi/cohealthprofiles.htm.
33. Kentucky Department for Public Health. 2011. Kentucky Area Development District (ADD) Profiles: 2010 Behavioral Risk Factor Surveillance System (BRFSS).
34. Kentucky Department for Public Health. 2012. An Integrated Epidemiologic Profile for HIV/AIDS Prevention and Care Planning for Kentucky, 2010.
35. Kentucky Department for Public Health. 2012. Kentucky Area Development District (ADD) Profiles: 2011 Behavioral Risk Factor Surveillance System (BRFSS).
36. Kentucky Injury Prevention and Research Center (KIPRIC). 2010. Kentucky Injury Indicators, 2004-2008.
37. Kentucky Injury Prevention and Research Center (KIPRIC). 2012. Kentucky Injury Indicators, 2010.
38. Kentucky Injury Prevention and Research Center (KIPRIC). 2012. Suicide and Suicide Attempts in Kentucky, 2001-2011.
39. Kentucky State Police. 2011. Crime in Kentucky: 2011, 2010 Crime Reports.

40. Kentucky State Police. 2010. Traffic Collision Facts: 2010 Report.
41. Kiely, John L. and Kogan, Michael. 1994. "Prenatal Care," in LS Wilcox and JS Marks, From Data to Action: CDC's Public Health Surveillance for Women, Infants, and Children.
42. MacDorman MF, Mathews TJ. 2008. Recent Trends in Infant Mortality in the United States. *NCHS data brief*, no 9. Hyattsville, MD: National Center for Health Statistics.
43. National Prevention Council. 2011. *National Prevention Strategy*.
44. Swann, Amy, A. 2012. 2011 Kentucky KIDS COUNT County Data Book Highlight: Smoking During Pregnancy. Retrieved on June 29, 2012 from www.kykidsinfoocus.org.
45. United Health Foundation. 2011. America's Health Rankings: A Call for Action for Individuals and Their Communities, 2011. Available from www.americashealthrankings.org.
46. United States Census Bureau - 2012. Available at www.census.gov; <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>; <http://quickfacts.census.gov/qfd/index.html>; and www.census.gov/acs/www.
47. United States Census Bureau. 2012. Small Area Income and Poverty Estimates. Available at www.census.gov/did/www/saipe/data/interactive/#
48. United States Census Bureau. 2012. Small Area Health Insurance Estimates. Available at www.census.gov/did/www/sahie.
49. United States Department for Labor, Bureau of Labor Statistics. 2013. Unemployment Rates for States. Downloaded on March 11, 2013 from www.bls.gov/web/laus/laumstrk.htm
50. University of Wisconsin, Population Health Institute. 2011. Health Rankings and Roadmaps,. Available from www.countyhealthrankings.org.
51. Watts, Amy, 2006. The State of the Commonwealth Index: Kentucky Makes Steady Quality-of-Life Progress, *Foresight*, No. 45.

LIST OF FIGURES AND TABLES

	TITLE
FIGURES	
Figure 1	American's Health Rankings: Kentucky 1990-2012
Figure 2	Kentucky's 15 Area Development Districts
Figure 3	Education: High School Graduate & Some College
Figure 4	Medium Household Income
Figure 5	Percentage of Population Living in Poverty
Figure 6	Children Living in Poverty
Figure 7	Uninsured Citizens
Figure 8	Population to Primary Care Physicians
Figure 9	Perception of Fair or Poor Health
Figure 10	Poor Physical Health Days
Figure 11	Poor Mental Health Days
Figure 12	Quality of Life
Figure 13	What's Really Killing Us?
Figure 14	Adult Smokers (1990 - 2011)
Figure 15	Adult Smokers
Figure 16	Trends in Obesity
Figure 17	Obesity (Reference States)
Figure 18	Obesity (Reference Counties)
Figure 19	Physical Inactivity
Figure 20	Trends: Obesity, Physical Activity and Diabetes in Kentucky
Figure 21	Excessive Drinking
Figure 22	Teen Birth Rate
Figure 23	Mammogram Percentages and Breast Cancer Death Rates
Figure 24	Air Pollution in Kentucky (2003-2012)
Figure 25	Unhealthy Days (Air Pollution)
Figure 26	Recreational Facilities
Figure 27	Limited Access to Healthy Foods
Figure 28	Percentage of Fast Food Restaurants That are Fast Food
Figure 29	Poor Mental Unhealthy Days
Figure 30	Adults with Serious Psychological Distress
Figure 31	Inadequate Social Support
Figure 32	Early Prenatal Care (2007-2011)
Figure 33	Preterm Birth (1993 – 2012)
Figure 34	Preterm Birth (Reference States)
Figure 35	Preterm Birth (Reference Counties)
Figure 36	Low Birthweight (1993-2012)
Figure 37	Low Birthweight (Reference States)

Figure 38	Low Birthweight (Reference Counties)
Figure 39	Births to Women Under 18
Figure 40	Births to Unmarried Women
Figure 41	Percent of Women Reporting Smoking During Pregnancy
Figure 42	Breastfeeding
Figure 43	Babies breastfed 3 months or more among mothers 22-44 years
Figure 44	Premature Death (YPLL-75)
Figure 45	Trends in Premature Death: KY and U.S.
Figure 46	Trends in Death Rates: Cardiovascular Disease (1990 – 2012)
Figure 47	Trends in Death Rates: All Cancers (1990 – 2012)
Figure 48	Lung & Bronchus Cancer: Incidence and Death Rates
Figure 49	Smokers
Figure 50	Lung & Bronchus Cancer: Incidence and Death Rates
Figure 51	Adult Smokers
Figure 52	Infant Mortality in Industrialized Countries
Figure 53	Infant Mortality Rates by Race and Ethnicity in the U.S., 2005
Figure 54	Life Expectancy at Birth
Figure 55	Percent of Population Diagnosed with Diabetes in Kentucky
Figure 56	Growth of Diabetes in Kentucky (1996-2012)
Figure 57	Ever Had Heart Attack
Figure 58	High Blood Pressure in Kentucky (1996-2012)
Figure 59	High Blood Pressure
Figure 60	High Cholesterol & Obesity (1990-2011)
Figure 61	High Cholesterol
Figure 62	Selected Health Problems
Figure 63	Total Death Rates (MVA)
Figure 64	Age-Specific MV Traffic Fatality Rate, 2004-2008
Figure 65	Seat Belt Usage in Kentucky
Figure 66	Violent Crime
Figure 67	Child Victim Rates
Figure 68	Infectious Disease Trends (1990-2011)
Figure 69	Tuberculosis Cases in Kentucky
Figure 70	TB Cases Rates, KY vs. US (2007-2011)
Figure 71	Viral Hepatitis (2004-2011)
Figure 72	Sexually Transmitted Infections
Figure 73	Immunization Coverage in Kentucky
Figure 74	The Ten Essential Public Health Services
Figure 75-A	The Public Health System
Figure 75-B	The Governmental Public Health System
Figure 76	Summary of Average EPHS Performance Scores
Figure 77	Performance Scores by Essential Service for Each Model Standard
Figure 78	Performance Scores by Model Standards for Each Essential Service
Figure 79	Percent of the System Essential Service Scores

Figure 80	Percent of the System Model Standard Scores
Figure 81	Summary of Average EPHS Performance Scores
Figure 82	Winnable Battle Areas

TABLES

Table 1	County Composition of Area Development Districts
Table 2	Population and Growth
Table 3	Comparison with Bordering States
Table 4	Comparison of Gender Distribution
Table 5	Population Segmented by Age
Table 6	Population Segmented by Race & Ethnicity
Table 7	Education Level
Table 8	Kentucky Uninsured
Table 9	Mammogram Percent by ADD District
Table 10	Pap Test by ADD District
Table 11	Colorectal Screening Percent by ADD District
Table 12	Vaccine Coverage for Flu/Pneumonia by ADD District
Table 13	Visit to Dentist/Dental Clinic in Last Year by ADD District
Table 14	Reported versus Expected Cases of Three Infectious Diseases
Table 15	Toxic Chemicals Released Annually
Table 16	Kentucky Psychiatric Inpatient Hospitalizations
Table 17	Birth Outcomes by Kentucky Counties Ranked by Percentage of Women who Smoke While Pregnant
Table 18	Comparison of Ten Leading Causes of Death in U.S. and KY with Kentucky's 15 ADD Districts
Table 19	Death Rates from Common Causes
Table 20	Infant Mortality
Table 21	Population with Diagnosed Diabetes by ADD Districts
Table 22	Cardiovascular Disease by ADD District
Table 23	Selected Health Problems by ADD District
Table 24	Type of Motor Vehicle Fatality
Table 25	Collisions by Area Development Districts (2010)
Table 26	Kentucky Offense Data
Table 27	Domestic Violence Protective Orders
Table 28	Reportable Disease Summary
Table 29	HIV Infections Diagnosed in Kentucky by Current Status and Year of HIV Diagnosis
Table 30	Estimated Vaccination Coverage Among Children 19-35 Months of Age

Our Mission:

To improve the health and safety of people in Kentucky through Prevention, Promotion, and Protection.

Our Vision:

Healthier People...Healthier Communities

Our Values:

We achieve Excellence through REACH Values:
Responsibility, Equity, Accountability,
Collaboration, & Honesty

Strategic Plan Focus Areas :

People, Quality, Efficiency & Effectiveness, & Improved Outcomes



Kentucky Public Health

Prevent. Promote. Protect.

The Kentucky Department for Public Health (KDPH) is organized under the Cabinet for Health and Family Services (CHFS) and is located in the state capitol, Frankfort, Kentucky. Information about the organization and its programs and services is available at <http://chfs.ky.gov/dph/>.