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

FRIEDELL 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.
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. 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.

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 *America’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. 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. 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). 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. 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.
Table 1 lists each ADD District with its county composition.

<table>
<thead>
<tr>
<th>ADD District</th>
<th>Counties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase (PU) ADD</td>
<td>Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, McCracken, Marshall</td>
</tr>
<tr>
<td>Pennyryle (PR) ADD</td>
<td>Caldwell, Christian, Crittenden, Hopkins, Livingston, Lyon, Muhlenberg, Todd, Trigg</td>
</tr>
<tr>
<td>Green River (GR) ADD</td>
<td>Daviess, Hancock, Henderson, McLean, Ohio, Union, Webster</td>
</tr>
<tr>
<td>Barren River (BR) ADD</td>
<td>Allen, Barren, Butler, Edmonson, Hart, Logan, Metcalfe, Monroe, Simpson, Warren</td>
</tr>
<tr>
<td>Lincoln Trail (LT) ADD</td>
<td>Breckinridge, Grayson, Hardin, Larue, Marion, Meade, Nelson, Washington</td>
</tr>
<tr>
<td>KIPDA (KI) ADD</td>
<td>Bullitt, Henry, Jefferson, Oldham, Shelby, Spencer, Trimble</td>
</tr>
<tr>
<td>Northern Kentucky (NK) ADD</td>
<td>Boone, Campbell, Carroll, Gallatin, Grant, Kenton, Owen, Pendleton</td>
</tr>
<tr>
<td>Bluegrass (BG) ADD</td>
<td>Anderson, Bourbon, Boyle, Clark, Estill, Fayette, Franklin, Garrard, Harrison, Jessamine, Lincoln, Madison, Mercer, Nicholas, Powell, Scott, Woodford</td>
</tr>
<tr>
<td>Lake Cumberland (LC) ADD</td>
<td>Adair, Casey, Clinton, Cumberland, Green, McCreary, Pulaski, Russell, Taylor, Wayne</td>
</tr>
<tr>
<td>Cumberland Valley (CV) ADD</td>
<td>Bell, Clay, Harlan, Jackson, Knox, Laurel, Rockcastle, Whitley</td>
</tr>
<tr>
<td>Kentucky River (KR) ADD</td>
<td>Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry, Wolfe</td>
</tr>
<tr>
<td>Big Sandy (BS) ADD</td>
<td>Floyd, Johnson, Magoffin, Martin, Pike</td>
</tr>
<tr>
<td>Gateway (GW) ADD</td>
<td>Bath, Menifee, Montgomery, Morgan, Rowan</td>
</tr>
<tr>
<td>Buffalo Trace (BT) ADD</td>
<td>Bracken, Fleming, Lewis, Mason, Robertson</td>
</tr>
<tr>
<td>FIVCO (FI) ADD</td>
<td>Boyd, Carter, Elliott, Greenup, Lawrence</td>
</tr>
</tbody>
</table>

Note: Reference counties are in **BOLD and underlined.**
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>
<thead>
<tr>
<th></th>
<th>Kentucky</th>
<th>U.S. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 Census</td>
<td>4,339,367</td>
<td>308,745,538</td>
</tr>
<tr>
<td>2000 Census</td>
<td>4,041,769</td>
<td>281,424,602</td>
</tr>
<tr>
<td>% Growth</td>
<td>7.4%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th></th>
<th>2010 Census</th>
<th>2000 Census</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>12,869,257</td>
<td>12,830,632</td>
<td>3.3%</td>
</tr>
<tr>
<td>Ohio</td>
<td>11,536,504</td>
<td>11,353,140</td>
<td>1.6%</td>
</tr>
<tr>
<td>Virginia</td>
<td>8,001,024</td>
<td>7,078,515</td>
<td>13.0%</td>
</tr>
<tr>
<td>Indiana</td>
<td>6,516,922</td>
<td>6,483,802</td>
<td>6.6%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>6,346,105</td>
<td>5,689,283</td>
<td>11.5%</td>
</tr>
<tr>
<td>Missouri</td>
<td>5,988,927</td>
<td>5,595,211</td>
<td>7.0%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>4,339,367</td>
<td>4,041,769</td>
<td>7.4%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>1,852,994</td>
<td>1,808,344</td>
<td>2.5%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>57,379,355</strong></td>
<td><strong>54,066,040</strong></td>
<td><strong>6.1%</strong></td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Kentucky</th>
<th>U.S. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>50.8%</td>
<td>50.8%</td>
</tr>
<tr>
<td>Male</td>
<td>49.2%</td>
<td>49.2%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Ages:</th>
<th>Kentucky</th>
<th>U.S. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>6.5%</td>
<td>6.5%</td>
</tr>
<tr>
<td>5 - 9 years</td>
<td>6.5%</td>
<td>6.6%</td>
</tr>
<tr>
<td>10 - 19 years</td>
<td>13.4%</td>
<td>13.8%</td>
</tr>
<tr>
<td>20 - 44 years</td>
<td>33.0%</td>
<td>33.6%</td>
</tr>
<tr>
<td>45 - 64 years</td>
<td>27.2%</td>
<td>26.4%</td>
</tr>
<tr>
<td>Over 65 years</td>
<td>13.3%</td>
<td>13.0%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Race or Ethnicity</th>
<th>Kentucky</th>
<th>U.S. Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>87.8%</td>
<td>72.4%</td>
</tr>
<tr>
<td>Black</td>
<td>7.8%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Asia, Hawaii, Pacific</td>
<td>1.2%</td>
<td>5.0%</td>
</tr>
<tr>
<td>2 or more races</td>
<td>1.7%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Hispanic/Latino origin</td>
<td>3.1%</td>
<td>16.3%</td>
</tr>
<tr>
<td>White not Hispanic</td>
<td>86.3%</td>
<td>63.7%</td>
</tr>
</tbody>
</table>

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.\textsuperscript{46} This compares to 20.8 percent of U.S. residents who speak a language other than English at home.\textsuperscript{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).
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. 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. Education impacts health status and life expectancy.

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

<table>
<thead>
<tr>
<th>Table 7. Education Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Diploma/GED</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Some College</td>
</tr>
</tbody>
</table>

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.
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 median income for 2011 was $41,141, with the counties ranging between $21,865 (Owsley) and $80,872 (Oldham). Figure 4 compares the median household income (in thousands of dollars) for the reference counties.
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.

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.
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.  

**UNINSURE 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.” 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>
<thead>
<tr>
<th></th>
<th>Kentucky #</th>
<th>Kentucky %</th>
<th>U.S. #</th>
<th>U.S. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children (&lt;18)</td>
<td>64,444</td>
<td>6.1%</td>
<td>5,527,657</td>
<td>7.5%</td>
</tr>
<tr>
<td>Adults (18-64)</td>
<td>553,972</td>
<td>20.6%</td>
<td>40,455,941</td>
<td>21.0%</td>
</tr>
<tr>
<td>Adults (65 &amp; Older)</td>
<td>2,042</td>
<td>0.4%</td>
<td>391,941</td>
<td>1.0%</td>
</tr>
<tr>
<td>Population Totals</td>
<td>620,458</td>
<td>14.5%</td>
<td>46,375,539</td>
<td>15.1%</td>
</tr>
</tbody>
</table>

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

![Perception of Poor or Fair Health](image)

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. stavs A., “The State of the Commonwealth Index”, 2003.
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.

TOBACCO USE

Tobacco use, primarily cigarette smoking, continues to be the leading cause of preventable disease, disability, and death in the United States. 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. 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.

![Adult Smokers (1990 - 2011)](image)

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

![Adult Smokers](image)

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. 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 (weight ÷ 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.

![Trends in Obesity (1990 - 2011)](image)

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.

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

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.
EXCESSIVE ALCOHOL CONSUMPTION

Figure 21 below compares excessive drinking among the reference counties.

Figure 21. Source: U.Wisc. - County Health Rankings and Roadmaps, 2013.
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. 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. 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>
<thead>
<tr>
<th>District Name</th>
<th>Mammogram at Age 40+</th>
<th>Mammogram at Age 50+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase District</td>
<td>71.3%</td>
<td>78.4%</td>
</tr>
<tr>
<td>Pennyrile District</td>
<td>74.5%</td>
<td>78.3%</td>
</tr>
<tr>
<td>Green River District</td>
<td>79.8%</td>
<td>80.9%</td>
</tr>
<tr>
<td>Barren River District</td>
<td>70.0%</td>
<td>71.7%</td>
</tr>
<tr>
<td>Lincoln Trail District</td>
<td>75.7%</td>
<td>74.2%</td>
</tr>
<tr>
<td>KIPDA District</td>
<td>74.6%</td>
<td>78.4%</td>
</tr>
<tr>
<td>Northern Kentucky District</td>
<td>65.8%</td>
<td>74.1%</td>
</tr>
<tr>
<td>Bluegrass District</td>
<td>65.5%</td>
<td>73.2%</td>
</tr>
<tr>
<td>Lake Cumberland District</td>
<td>68.7%</td>
<td>69.8%</td>
</tr>
<tr>
<td>Cumberland Valley District</td>
<td>61.7%</td>
<td>63.9%</td>
</tr>
<tr>
<td>Kentucky River District</td>
<td>66.2%</td>
<td>67.6%</td>
</tr>
<tr>
<td>Big Sandy District</td>
<td>68.4%</td>
<td>74.8%</td>
</tr>
<tr>
<td>Gateway District</td>
<td>67.3%</td>
<td>69.4%</td>
</tr>
<tr>
<td>Buffalo Trace District</td>
<td>68.4%</td>
<td>72.2%</td>
</tr>
<tr>
<td>FIVCO District</td>
<td>67.5%</td>
<td>70.8%</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>69.9%</td>
<td>74.3%</td>
</tr>
<tr>
<td>U.S.</td>
<td>75.6%</td>
<td>77.9%</td>
</tr>
</tbody>
</table>

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. 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. 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. Table 10 displays the percentage of women aged 18 and older who had a Pap test within the last three years.

<table>
<thead>
<tr>
<th>District Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase District</td>
<td>82.7%</td>
</tr>
<tr>
<td>Pennyrile District</td>
<td>84.4%</td>
</tr>
<tr>
<td>Green River District</td>
<td>81.3%</td>
</tr>
<tr>
<td>Barren River District</td>
<td>77.9%</td>
</tr>
<tr>
<td>Lincoln Trail District</td>
<td>83.6%</td>
</tr>
<tr>
<td>KIPDA District</td>
<td>82.5%</td>
</tr>
<tr>
<td>Northern Kentucky District</td>
<td>82.5%</td>
</tr>
<tr>
<td>Bluegrass District</td>
<td>83.6%</td>
</tr>
<tr>
<td>Lake Cumberland District</td>
<td>75.4%</td>
</tr>
<tr>
<td>Cumberland Valley District</td>
<td>74.3%</td>
</tr>
<tr>
<td>Kentucky River District</td>
<td>74.3%</td>
</tr>
<tr>
<td>Big Sandy District</td>
<td>78.3%</td>
</tr>
<tr>
<td>Gateway District</td>
<td>74.7%</td>
</tr>
<tr>
<td>Buffalo Trace District</td>
<td>74.6%</td>
</tr>
<tr>
<td>FIVCO District</td>
<td>76.3%</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>80.9%</td>
</tr>
<tr>
<td>U.S.</td>
<td>77.9%</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>District Name</th>
<th>Blood Stool Screening Test</th>
<th>Sigmoidoscopy/Colonoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase District</td>
<td>13.9%</td>
<td>72.4%</td>
</tr>
<tr>
<td>Pennyrile District</td>
<td>19.3%</td>
<td>66.0%</td>
</tr>
<tr>
<td>Green River District</td>
<td>20.7%</td>
<td>66.1%</td>
</tr>
<tr>
<td>Barren River District</td>
<td>14.6%</td>
<td>62.7%</td>
</tr>
<tr>
<td>Lincoln Trail District</td>
<td>12.3%</td>
<td>64.3%</td>
</tr>
<tr>
<td>KIPDA District</td>
<td>16.0%</td>
<td>65.7%</td>
</tr>
<tr>
<td>Northern Kentucky District</td>
<td>11.3%</td>
<td>65.9%</td>
</tr>
<tr>
<td>Bluegrass District</td>
<td>11.9%</td>
<td>66.1%</td>
</tr>
<tr>
<td>Lake Cumberland District</td>
<td>12.3%</td>
<td>55.1%</td>
</tr>
<tr>
<td>Cumberland Valley District</td>
<td>14.1%</td>
<td>54.9%</td>
</tr>
<tr>
<td>Kentucky River District</td>
<td>10.3%</td>
<td>52.8%</td>
</tr>
<tr>
<td>Big Sandy District</td>
<td>18.4%</td>
<td>60.0%</td>
</tr>
<tr>
<td>Gateway District</td>
<td>15.8%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Buffalo Trace District</td>
<td>14.5%</td>
<td>59.6%</td>
</tr>
<tr>
<td>FIVCO District</td>
<td>11.7%</td>
<td>58.4%</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>14.3%</td>
<td>63.7%</td>
</tr>
<tr>
<td>U.S.</td>
<td>17.3%</td>
<td>65.3%</td>
</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>District Name</th>
<th>Adults Aged 65+ Flu Vaccine</th>
<th>Adults Aged 65+ Pneumonia Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase District</td>
<td>61.5%</td>
<td>61.8%</td>
</tr>
<tr>
<td>Pennyrile District</td>
<td>73.3%</td>
<td>69.6%</td>
</tr>
<tr>
<td>Green River District</td>
<td>60.7%</td>
<td>58.2%</td>
</tr>
<tr>
<td>Barren River District</td>
<td>60.7%</td>
<td>58.2%</td>
</tr>
<tr>
<td>Lincoln Trail District</td>
<td>70.0%</td>
<td>61.4%</td>
</tr>
<tr>
<td>KIPDA District</td>
<td>75.6%</td>
<td>62.2%</td>
</tr>
<tr>
<td>Northern Kentucky District</td>
<td>65.6%</td>
<td>69.5%</td>
</tr>
<tr>
<td>Bluegrass District</td>
<td>68.9%</td>
<td>68.3%</td>
</tr>
<tr>
<td>Lake Cumberland District</td>
<td>62.4%</td>
<td>61.6%</td>
</tr>
<tr>
<td>Cumberland Valley District</td>
<td>61.3%</td>
<td>56.2%</td>
</tr>
<tr>
<td>Kentucky River District</td>
<td>61.5%</td>
<td>70.6%</td>
</tr>
<tr>
<td>Big Sandy District</td>
<td>66.3%</td>
<td>69.6%</td>
</tr>
<tr>
<td>Gateway District</td>
<td>61.7%</td>
<td>60.2%</td>
</tr>
<tr>
<td>Buffalo Trace District</td>
<td>69.4%</td>
<td>65.3%</td>
</tr>
<tr>
<td>FIVCO District</td>
<td>61.7%</td>
<td>66.2%</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>67.7%</td>
<td>64.6%</td>
</tr>
<tr>
<td>U.S.</td>
<td>67.5%</td>
<td>68.8%</td>
</tr>
</tbody>
</table>

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. 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>
<thead>
<tr>
<th>District Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase District</td>
<td>62.7%</td>
</tr>
<tr>
<td>Pennyrile District</td>
<td>59.1%</td>
</tr>
<tr>
<td>Green River District</td>
<td>68.5%</td>
</tr>
<tr>
<td>Barren River District</td>
<td>57.9%</td>
</tr>
<tr>
<td>Lincoln Trail District</td>
<td>66.7%</td>
</tr>
<tr>
<td>KIPDA District</td>
<td>66.2%</td>
</tr>
<tr>
<td>Northern Kentucky District</td>
<td>65.0%</td>
</tr>
<tr>
<td>Bluegrass District</td>
<td>67.8%</td>
</tr>
<tr>
<td>Lake Cumberland District</td>
<td>60.6%</td>
</tr>
<tr>
<td>Cumberland Valley District</td>
<td>56.7%</td>
</tr>
<tr>
<td>Kentucky River District</td>
<td>51.9%</td>
</tr>
<tr>
<td>Big Sandy District</td>
<td>57.5%</td>
</tr>
<tr>
<td>Gateway District</td>
<td>56.3%</td>
</tr>
<tr>
<td>Buffalo Trace District</td>
<td>54.0%</td>
</tr>
<tr>
<td>FIVCO District</td>
<td>55.8%</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>63.2%</td>
</tr>
<tr>
<td>U.S.</td>
<td>70.1%</td>
</tr>
</tbody>
</table>

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. 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.

![Air Pollution in Kentucky (2003-2012)](image)

*Micrograms of fine particles per cubic meter*

Figure 24. Source: www.americashealthrankings.org, 2012.
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 25. 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.  

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

Figure 27. 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.

Figure 28. Source: U.Wisc. – County Health Rankings and Roadmaps, 2013.
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>
<thead>
<tr>
<th>Table 14. Reported versus Expected Cases of Three Infectious Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Chittenden County, VT</td>
</tr>
<tr>
<td>Oldham County</td>
</tr>
<tr>
<td>Boone County</td>
</tr>
<tr>
<td>Fayette County</td>
</tr>
<tr>
<td>Jefferson County</td>
</tr>
<tr>
<td>Perry County</td>
</tr>
<tr>
<td>Floyd County</td>
</tr>
<tr>
<td>Quitman County, MS</td>
</tr>
<tr>
<td>East Carroll Parish, LA</td>
</tr>
</tbody>
</table>


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>
<thead>
<tr>
<th>Table 15. Toxic Chemicals Released Annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>County</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Chittenden County, VT</td>
</tr>
<tr>
<td>Oldham County</td>
</tr>
<tr>
<td>Boone County</td>
</tr>
<tr>
<td>Fayette County</td>
</tr>
<tr>
<td>Jefferson County</td>
</tr>
<tr>
<td>Perry County</td>
</tr>
<tr>
<td>Floyd County</td>
</tr>
<tr>
<td>Quitman County, MS</td>
</tr>
<tr>
<td>East Carroll Parish, LA</td>
</tr>
</tbody>
</table>

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

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.”

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).
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Admissions</th>
<th>ALOS</th>
<th>Days of Hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>37,303</td>
<td>11.0</td>
<td>411,062</td>
</tr>
<tr>
<td>2002</td>
<td>38,116</td>
<td>12.2</td>
<td>407,486</td>
</tr>
<tr>
<td>2003</td>
<td>38,387</td>
<td>10.1</td>
<td>393,613</td>
</tr>
<tr>
<td>2004</td>
<td>36,989</td>
<td>10.7</td>
<td>395,723</td>
</tr>
<tr>
<td>2005</td>
<td>37,044</td>
<td>11.9</td>
<td>410,342</td>
</tr>
<tr>
<td>2006</td>
<td>36,441</td>
<td>11.0</td>
<td>420,651</td>
</tr>
<tr>
<td>2007</td>
<td>36,867</td>
<td>11.5</td>
<td>430,996</td>
</tr>
<tr>
<td>2008</td>
<td>36,592</td>
<td>11.4</td>
<td>422,866</td>
</tr>
<tr>
<td>2009</td>
<td>37,286</td>
<td>11.7</td>
<td>429,742</td>
</tr>
<tr>
<td>2010</td>
<td>37,522</td>
<td>11.4</td>
<td>432,922</td>
</tr>
</tbody>
</table>

Note: Chart does not include state psychiatric hospital utilization.

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

Inadequate Social Support

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

![Early Prenatal Care (2007-2011)](image)

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.

**Preterm Births (Reference Counties)**

<table>
<thead>
<tr>
<th>County</th>
<th>Preterm Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chittenden</td>
<td>9.4%</td>
</tr>
<tr>
<td>Oldham</td>
<td>14.0%</td>
</tr>
<tr>
<td>Boone</td>
<td>11.2%</td>
</tr>
<tr>
<td>Fayette</td>
<td>14.1%</td>
</tr>
<tr>
<td>Jefferson</td>
<td>15.5%</td>
</tr>
<tr>
<td>Perry</td>
<td>15.6%</td>
</tr>
<tr>
<td>Floyd</td>
<td>15.1%</td>
</tr>
<tr>
<td>Quitman</td>
<td>18.1%</td>
</tr>
<tr>
<td>East Carroll</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

Figure 35. Source: HHS – communityhealth.hhs.gov, 2009.

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

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

Figure 37. Source: www.americashealthrankings.org, 2012.
Figure 39 below compares the percentage of births to women under the age of 18 among the reference counties.

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

Figure 39. Source: HHS – communityhealth.hhs.gov, 2009.
Figure 40 shows the percentage of births to unmarried women for the reference counties.

![Births to Unmarried Women](image)

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

**Pregnant Women Who Smoke**

![Percent of Women Reporting Smoking During Pregnancy, 2007-2009](image)

*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>
<thead>
<tr>
<th>Percent of Pregnant Women who Smoke</th>
<th># of Counties</th>
<th>Infant Mortality</th>
<th>Low Birth Weight</th>
<th>Teenage Birth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>15% - 24%</td>
<td>26</td>
<td>6.65</td>
<td>8.67%</td>
<td>45.00</td>
</tr>
<tr>
<td>25% - 30%</td>
<td>34</td>
<td>6.35</td>
<td>8.69%</td>
<td>54.15</td>
</tr>
<tr>
<td>31% - 36%</td>
<td>37</td>
<td>7.38</td>
<td>9.20%</td>
<td>59.49</td>
</tr>
<tr>
<td>37% - 54%</td>
<td>23</td>
<td>8.09</td>
<td>9.74%</td>
<td>67.17</td>
</tr>
</tbody>
</table>


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.
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.

"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>
<thead>
<tr>
<th>U.S.</th>
<th>KY</th>
<th>PU</th>
<th>PR</th>
<th>GR</th>
<th>BR</th>
<th>LT</th>
<th>KI</th>
<th>NK</th>
<th>BG</th>
<th>LC</th>
<th>CV</th>
<th>KR</th>
<th>BS</th>
<th>GW</th>
<th>BT</th>
<th>FI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Malignant Cancers</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Stroke</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Chronic Lower Respiratory Diseases</td>
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<td>3</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>3</td>
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<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Unintended Injuries</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>5</td>
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<td>3</td>
<td>3</td>
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<td>3</td>
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</tr>
<tr>
<td>Diabetes</td>
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<td>7</td>
<td>7</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>6</td>
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<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Alzheimer’s Disease</td>
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<td>8</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>7</td>
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<td>10</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Influenza &amp; Pneumonia</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Kidney Disease</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td>9</td>
<td>8</td>
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<td>9</td>
<td>7</td>
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<tr>
<td>Septicemia</td>
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<td>10</td>
<td>10</td>
<td>10</td>
<td>8</td>
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<tr>
<td>Suicide</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>10</td>
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<td>10</td>
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<tr>
<td>Atherosclerosis</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

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>
<thead>
<tr>
<th>Table 19. Death Rates from Common Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Breast Cancer (Female)</td>
</tr>
<tr>
<td>Colon Cancer</td>
</tr>
<tr>
<td>CVD</td>
</tr>
<tr>
<td>Homicide</td>
</tr>
<tr>
<td>Lung Cancer</td>
</tr>
<tr>
<td>MVA Injuries</td>
</tr>
<tr>
<td>Stroke</td>
</tr>
<tr>
<td>Suicide</td>
</tr>
<tr>
<td>All accidents</td>
</tr>
</tbody>
</table>

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.
CANCER DEATHS

Malignant cancers are the second leading cause of death in most areas. According 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.
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).

![Lung & Bronchus Cancer Incidence and Death Rates](image1)

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

![Smokers](image2)

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."

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.

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

| Infant Mortality Rates by Race and Ethnicity in the U.S., 2005 |

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>U.S. Rate</th>
<th>CH, VT Rate</th>
<th>KY Rate</th>
<th>Oldham</th>
<th>Boone</th>
<th>Fayette</th>
<th>Jeffer-son</th>
<th>Perry</th>
<th>Floyd</th>
<th>QT, MS</th>
<th>ECP, LA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant Mortality</td>
<td>6.9</td>
<td>5.8</td>
<td>6.8</td>
<td>3.3</td>
<td>5.2</td>
<td>7.3</td>
<td>6.1</td>
<td>6.9</td>
<td>7.3</td>
<td>10.7</td>
<td>7.8</td>
</tr>
</tbody>
</table>

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.
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).

![Percent of Population Diagnosed with Diabetes](image)

Figure 55. Source: [www.americashealthrankings.org](http://www.americashealthrankings.org), 2012.
Figure 56 below shows the growth of diabetes in Kentucky between 1996 and 2011.

![Growth of Diabetes in Kentucky (1996-2011)](image)

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>
<thead>
<tr>
<th>District Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase District</td>
<td>10.0%</td>
</tr>
<tr>
<td>Pennyrile District</td>
<td>8.3%</td>
</tr>
<tr>
<td>Green River District</td>
<td>10.6%</td>
</tr>
<tr>
<td>Barren River District</td>
<td>8.1%</td>
</tr>
<tr>
<td>Lincoln Trail District</td>
<td>11.4%</td>
</tr>
<tr>
<td>KIPDA District</td>
<td>6.6%</td>
</tr>
<tr>
<td>Northern Kentucky District</td>
<td>10.6%</td>
</tr>
<tr>
<td>Bluegrass District</td>
<td>8.8%</td>
</tr>
<tr>
<td>Lake Cumberland District</td>
<td>10.1%</td>
</tr>
<tr>
<td>Cumberland Valley District</td>
<td>16.2%</td>
</tr>
<tr>
<td>Kentucky River District</td>
<td>15.9%</td>
</tr>
<tr>
<td>Big Sandy District</td>
<td>16.9%</td>
</tr>
<tr>
<td>Gateway District</td>
<td>12.8%</td>
</tr>
<tr>
<td>Buffalo Trace District</td>
<td>9.7%</td>
</tr>
<tr>
<td>FIVCO District</td>
<td>15.8%</td>
</tr>
<tr>
<td>KENTUCKY</td>
<td>10.0%</td>
</tr>
<tr>
<td>U.S.</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

**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.

![Ever Had Heart Attack](image)

Figure 57. Source: www.americashealthrankings.org, 2012.
## Table 22. Cardiovascular Disease by ADD District

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

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

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

![High Cholesterol & Obesity (1990-2011)](image)

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.

![High Cholesterol](image)

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.

![Select Health Problems](image_url)

Figure 62. Source: KDPH – KY Area Development District (ADD) Profiles, 2010.
### Table 23. Selected Health Problems by ADD District

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


*Asthma = adults who currently have asthma
*Disability = adults with limited activity
*Complete edentulism = adults 65 and older who had all their natural teeth extracted
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.](image-url)
Figure 64 below details the age-specific fatality rate for motor vehicle traffic accidents between 2004 and 2008.

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

<table>
<thead>
<tr>
<th>Type of Motor Vehicle (MV) Fatality</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV Occupants</td>
<td>1,547</td>
<td>41.36%</td>
</tr>
<tr>
<td>Motorcyclist</td>
<td>324</td>
<td>8.66%</td>
</tr>
<tr>
<td>Pedestrian</td>
<td>219</td>
<td>5.86%</td>
</tr>
<tr>
<td>Pedal cyclist</td>
<td>22</td>
<td>0.59%</td>
</tr>
<tr>
<td>Other or unspecified</td>
<td>1,628</td>
<td>43.53%</td>
</tr>
</tbody>
</table>

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

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


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

![Seat Belt Usage in Kentucky](image)

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.
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. 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. 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. Figure 66 below compares the violent crime rate for the reference states.

![Violent Crime Chart]

Figure 66. Source: www.americashealthrankings.org, 2012.
Table 26. Kentucky Offense Data

<table>
<thead>
<tr>
<th>Crime Classification</th>
<th>2009</th>
<th>2010</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murder</td>
<td>177</td>
<td>180</td>
<td>+1.69%</td>
</tr>
<tr>
<td>Rape</td>
<td>1,567</td>
<td>1,545</td>
<td>-1.40%</td>
</tr>
<tr>
<td>Robbery</td>
<td>3,529</td>
<td>3,732</td>
<td>+5.75%</td>
</tr>
<tr>
<td>Aggravated Assault</td>
<td>6,382</td>
<td>5,691</td>
<td>-10.83%</td>
</tr>
<tr>
<td>Burglary</td>
<td>28,055</td>
<td>29,170</td>
<td>+3.97%</td>
</tr>
<tr>
<td>Larceny Theft</td>
<td>73,295</td>
<td>74,185</td>
<td>+1.21%</td>
</tr>
<tr>
<td>Auto Theft</td>
<td>6,019</td>
<td>6,075</td>
<td>+0.93%</td>
</tr>
<tr>
<td>Arson</td>
<td>761</td>
<td>711</td>
<td>-6.57%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119,785</strong></td>
<td><strong>121,289</strong></td>
<td><strong>+1.26%</strong></td>
</tr>
</tbody>
</table>


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

<table>
<thead>
<tr>
<th></th>
<th>FY 2009</th>
<th>FY 2010</th>
<th>FY 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Temporary Orders</td>
<td>19,429</td>
<td>19,324</td>
<td>15,019</td>
</tr>
<tr>
<td>Emergency Temporary Orders - Caution</td>
<td>5,931</td>
<td>6,247</td>
<td>5,249</td>
</tr>
<tr>
<td>Emergency Protective Orders</td>
<td>7,909</td>
<td>7,501</td>
<td>5,836</td>
</tr>
<tr>
<td>Emergency Protective Orders - Caution</td>
<td>3,102</td>
<td>3,342</td>
<td>3,380</td>
</tr>
<tr>
<td>Domestic Violence Summons</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36,371</strong></td>
<td><strong>36,414</strong></td>
<td><strong>29,498</strong></td>
</tr>
</tbody>
</table>

CHILD MALTREATMENT

Child maltreatment is a serious issue in Kentucky and the nation. 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.

![Child Victim Rates Diagram]

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.

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. Vermont is ranked 2nd best and Mississippi is ranked 37th. West Virginia leads the nation according to these rankings.

Table 28 below (on two pages) summarizes reportable diseases between 2004 and 2011.
### Table 28. Reportable Disease Summary (2004-2011)

<table>
<thead>
<tr>
<th>Disease Condition</th>
<th>2004 Cases</th>
<th>2004 Crude Rate</th>
<th>2005 Cases</th>
<th>2005 Crude Rate</th>
<th>2006 Cases</th>
<th>2006 Crude Rate</th>
<th>2007 Cases</th>
<th>2007 Crude Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquired Immunodeficiency Syndrome (AIDS)</td>
<td>211</td>
<td>5.1</td>
<td>176</td>
<td>4.2</td>
<td>212</td>
<td>5.0</td>
<td>242</td>
<td>5.7</td>
</tr>
<tr>
<td>Botulism Infant</td>
<td>1</td>
<td>&lt;0.1</td>
<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Brucellosis</td>
<td>2</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Campylobacteriosis</td>
<td>273</td>
<td>6.6</td>
<td>288</td>
<td>6.9</td>
<td>250</td>
<td>6.0</td>
<td>283</td>
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<tr>
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<td>6470</td>
<td>156.4</td>
<td>8351</td>
<td>200.5</td>
<td>8939</td>
<td>212.9</td>
<td>8798</td>
<td>207.7</td>
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<tr>
<td>Cholera</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cryptosporidiosis</td>
<td>47</td>
<td>1.1</td>
<td>149</td>
<td>3.6</td>
<td>44</td>
<td>1.0</td>
<td>249</td>
<td>5.9</td>
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<tr>
<td>Ehrlichiosis/Anaplasmosis</td>
<td>2</td>
<td>&lt;0.1</td>
<td>5</td>
<td>0.1</td>
<td>4</td>
<td>0.1</td>
<td>4</td>
<td>0.1</td>
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<tr>
<td>Encephalitis/California</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
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</tr>
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<td>Encephalitis/St. Louis</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
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</tr>
<tr>
<td>Encephalitis/West Nile Virus</td>
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<td>&lt;0.1</td>
<td>1</td>
<td>&lt;0.1</td>
<td>1</td>
<td>&lt;0.1</td>
<td>1</td>
<td>&lt;0.1</td>
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<td>Gonorrhea</td>
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<td>66.7</td>
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<td>70.5</td>
<td>3276</td>
<td>78.0</td>
<td>3449</td>
<td>81.4</td>
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<td>0.4</td>
<td>14</td>
<td>0.3</td>
<td>7</td>
<td>0.2</td>
<td>10</td>
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<td>Hansen Disease (Leprosy)</td>
<td>-</td>
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<td>&lt;0.1</td>
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<td>25</td>
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<td>20</td>
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<td>-</td>
<td>49</td>
<td>-</td>
<td>55</td>
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<td>0.1</td>
<td>7</td>
<td>0.2</td>
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<td>0.2</td>
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<td>11</td>
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<td>14</td>
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<td>3</td>
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<td>Rubella</td>
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<td>-</td>
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<tr>
<td>Salmonellosis</td>
<td>361</td>
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<td>488</td>
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<td>463</td>
<td>11.0</td>
<td>576</td>
<td>13.6</td>
</tr>
<tr>
<td>Shiga Toxin E. Coli (STEC)</td>
<td>41</td>
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<td>76</td>
<td>1.8</td>
<td>101</td>
<td>2.4</td>
<td>123</td>
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<td>8.0</td>
<td>238</td>
<td>5.7</td>
<td>505</td>
<td>11.9</td>
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<td>Streptococcal disease, invasive, group A</td>
<td>62</td>
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<td>35</td>
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<td>44</td>
<td>1.0</td>
<td>41</td>
<td>1.0</td>
</tr>
<tr>
<td>Streptococcal, toxic shock syndrome</td>
<td>11</td>
<td>0.3</td>
<td>4</td>
<td>0.1</td>
<td>1</td>
<td>&lt;0.1</td>
<td>4</td>
<td>0.1</td>
</tr>
<tr>
<td>Streptococcus, pneumonia invasive drug resistant</td>
<td>32</td>
<td>0.8</td>
<td>35</td>
<td>0.8</td>
<td>39</td>
<td>0.9</td>
<td>29</td>
<td>0.7</td>
</tr>
<tr>
<td>Syphilis</td>
<td>151</td>
<td>3.7</td>
<td>129</td>
<td>3.1</td>
<td>188</td>
<td>4.5</td>
<td>90</td>
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</tr>
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<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Toxic Shock Syndrome</td>
<td>11</td>
<td>0.3</td>
<td>4</td>
<td>0.1</td>
<td>4</td>
<td>0.1</td>
<td>6</td>
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</tr>
<tr>
<td>Toxoplasmosis</td>
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<td>&lt;0.1</td>
<td>1</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>127</td>
<td>3.1</td>
<td>124</td>
<td>3.0</td>
<td>84</td>
<td>2.0</td>
<td>120</td>
<td>2.8</td>
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<td>3</td>
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<td>-</td>
<td>-</td>
<td>1</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Typhoid</td>
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<td>2</td>
<td>&lt;0.1</td>
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<td>Vibriosis</td>
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<td>-</td>
<td>2</td>
<td>&lt;0.1</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* 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

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

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.  

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.

![Viral Hepatitis (2004-2011) Case Rates per 100,000](image)

*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.
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. Table 29 below details those HIV infections diagnosed since 2000 by current status and year of diagnosis.

### Table 29. HIV Infections Diagnosed in Kentucky by Current Status and Year of HIV Diagnosis

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

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.\textsuperscript{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.”\textsuperscript{45} Figure 73 below shows Kentucky’s immunization coverage according to America’s Health Rankings.

![Immunization Coverage in Kentucky](image)

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 doses of Hib vaccine of any type, 3 or more doses of HepB vaccine, and 1 or more doses of varicella vaccine (Series 4-3-1-3-3-1-3). In this comparison, Kentucky's estimated vaccination coverage exceeds the percentage for Vermont, Mississippi and the nation.³

<table>
<thead>
<tr>
<th>State</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont</td>
<td>67.5 ±6.6</td>
</tr>
<tr>
<td>Kentucky</td>
<td>77.6 ±6.8</td>
</tr>
<tr>
<td>Mississippi</td>
<td>67.8 ±7.5</td>
</tr>
<tr>
<td>Louisiana</td>
<td>69.6 ±6.7</td>
</tr>
<tr>
<td>US National</td>
<td>68.5 ±1.3</td>
</tr>
</tbody>
</table>

* Immunization Series 4-3-1-3-3-1-3
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 NPHPSP assesses how well this system works together in performing the ten essential public health services.

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 NPHPSP 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.
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

EPHS 1: Monitor Health Status
- 1.1 Planning: 58.3
- 1.2 State-Local: 41.7
- 1.3 PM and QI: 50.0
- 1.4 Capacity and…: 66.7
- Overall: 54.2

EPHS 2: Diagnose and Investigate
- 2.1 Planning: 0.0
- 2.2 State-Local: 0.0
- 2.3 PM and QI: 87.5
- 2.4 Capacity and…: 66.7
- Overall: 88.5

EPHS 3: Educate/Empower
- 3.1 Planning: 62.5
- 3.2 State-Local: 75.0
- 3.3 PM and QI: 25.0
- 3.4 Capacity and…: 41.7
- Overall: 54.0

EPHS 4: Mobilize Partnerships
- 4.1 Planning: 50.0
- 4.2 State-Local: 37.5
- 4.3 PM and QI: 37.5
- 4.4 Capacity and…: 50.0
- Overall: 43.8

EPHS 5: Develop Policies/Plans
- 5.1 Planning: 68.8
- 5.2 State-Local: 58.3
- 5.3 PM and QI: 62.5
- 5.4 Capacity and…: 50.0

EPHS 6: Enforce Laws
- 6.1 Planning: 68.8
- 6.2 State-Local: 62.5
- 6.3 PM and QI: 37.5
- 6.4 Capacity and…: 33.3
- Overall: 50.5

EPHS 7: Link to Health Services
- 7.1 Planning: 43.8
- 7.2 State-Local: 50.0
- 7.3 PM and QI: 25.0
- 7.4 Capacity and…: 42.2

EPHS 8: Assure Workforce
- 8.1 Planning: 50.0
- 8.2 State-Local: 50.0
- 8.3 PM and QI: 50.0
- 8.4 Capacity and…: 50.0
- Overall: 50.0

EPHS 9: Evaluate Services
- 9.1 Planning: 50.0
- 9.2 State-Local: 41.7
- 9.3 PM and QI: 33.3
- 9.4 Capacity and…: 33.3
- Overall: 39.6

EPHS 10: Research/Innovations
- 10.1 Planning: 25.0
- 10.2 State-Local: 25.0
- 10.3 PM and QI: 25.0
- 10.4 Capacity and…: 25.0
- Overall: 25.0

Figure 77. Source: CDC - NPHPSP KY State Assessment, 2011
Performance Scores by Model Standard for each Essential Service

Model Standard 1: Planning and Implementation

Average Score = 57.7

Model Standard 2: State-Local Relationships

Average Score = 54.2

Model Standard 3: Performance Management and Quality Improvement

Average Score = 43.3

Model Standard 4: Public Health Capacity and Resources

Average Score = 46.7

Figure 78. Source: CDC - NPHPSP 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.

**Percentage of the System's Essential Services Scores that fall within the Five Activity Categories**

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

**Percentage of the System's Model Standard Scores that Fall within the Five Activity Categories**

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

Summary of Average EPHS Performance Scores

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

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.
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 82. 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.”

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 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.
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." 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.
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.
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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

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/.