

STUDY OF THE IMPACT OF THE ACA IMPLEMENTATION IN KENTUCKY

SEMI-ANNUAL REPORT

Baseline Data for the Implementation of the Affordable Care Act in Kentucky

Submitted to:

Foundation for a Healthy Kentucky

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I. INTRODUCTION

Overview

This report was produced by the State Health Access Data Assistance Center (SHADAC) at the University of Minnesota as part of a mixed-methods study, *Study of the Impact of the Affordable Care Act (ACA) Implementation in Kentucky*, funded by the Foundation for a Healthy Kentucky (Foundation). As part of this project, SHADAC will use semi-annual and annual reports to document the impact of the ACA in Kentucky using a set of indicators agreed upon by the Foundation and its ACA Impact Study Oversight Committee (see Appendix I for a complete list of indicators). These reports will track change in the indicators throughout the duration of this 34-month study (March 2015 through January 2018), and will include comparisons of Kentucky metrics with the U.S. and other states. Our approach is to present the estimates, organized by study domain, and to describe key findings of interest. This report includes metrics that are based on a secondary analysis of federal and state data resources. In future study years, the data sources included in the reports will be augmented with collection and analysis of primary survey and primary qualitative data. Together, the data will be used to conduct a comprehensive analysis of Kentucky's progress in implementing health reform over time.

Purpose of Current Report

The purpose of the first semi-annual report, *Baseline Data for the Implementation of the ACA in Kentucky*, is to describe the baseline status of the healthcare situation in Kentucky prior to ACA implementation. The report presents baseline data for all study indicators, under the five study domains: coverage, access, cost, quality, and health outcomes. We use calendar year 2012 data as our baseline because it pre-dates the first ACA enrollment period that began in October 2013 and because the 2012 data are available for most of the indicators. In a small number of cases, we pool data across two years to improve the precision of the estimates, or use 2011 or 2013 estimates when 2012 data is not available (for more detail on our methodology, see Appendix 1). All data sources, age categories, and data years are noted throughout the document. As more data become available, future reports will be used to examine change against the baseline estimates included in this report.

The document is organized by domain (coverage, access, cost, quality, and health outcomes), with each chapter beginning with a discussion of the domain's importance for ACA tracking, the major data sources used for measurement, and a summary of key findings. We then present the baseline data for each of the indicators included in that domain. We conclude with a discussion of next steps in the study process, and an appendix describing our data sources, technical methodology, and the complete set of study indicators in tabular form.

II. STUDY FINDINGS: BASELINE DATA

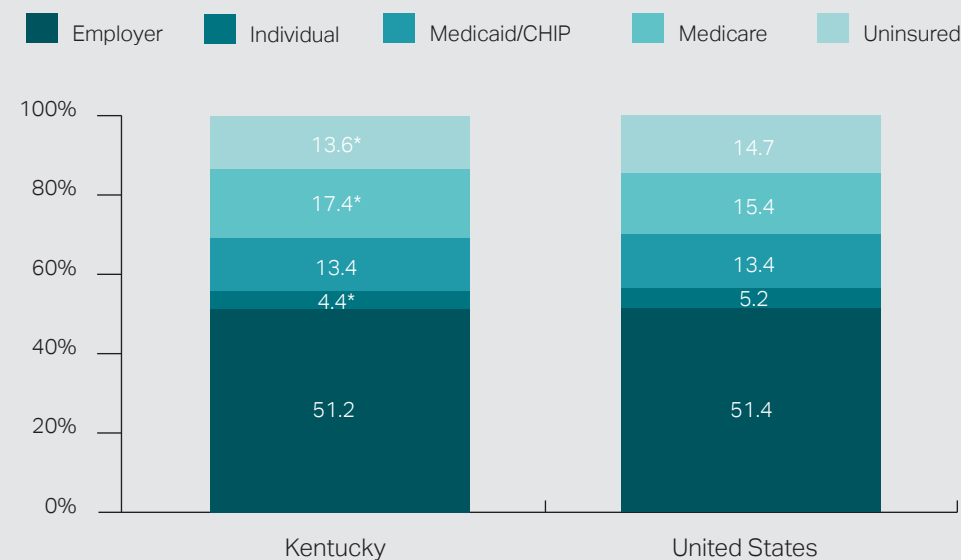
DOMAIN #1: HEALTH INSURANCE COVERAGE

Health insurance coverage is a critical component of access to healthcare services. Having health insurance coverage is associated with increased access to needed medical care, better healthcare outcomes, and improved health status.¹ In this study, the metrics used to monitor health insurance coverage in Kentucky and over time include the distribution of type of health insurance coverage (public, private and uninsured); the percentage of employers that offer health insurance coverage by firm size; and rates of underinsurance. Our data sources include key federal surveys that provide state-level estimates of health insurance coverage including data from the American Community Survey (ACS), the Medical Expenditure Panel Survey-Insurance Component (MEPS-IC) and the Current Population Survey (CPS). In future reports, as we measure change over time, we will provide comparisons with neighboring states as well as other state groupings of interest. Where data are available, we include estimates by age category.

At baseline, the indicators present an overview of healthcare coverage in Kentucky with some bright spots and some key challenges. The coverage metrics show that pre-ACA Kentucky was consistent with, and in some cases better than, the nation as a whole. Specifically, in 2012, the rate of uninsurance was lower in Kentucky than the national average, and this held true across many of the uninsurance rate estimates by age, income, and gender. Kentucky was statistically equivalent to the rest of the country on rates of underinsurance, and slightly better off than the national average in terms of the rate of employers offering insurance coverage to workers. However, there was still a substantial proportion of the population that was uninsured, and there was some disparity in coverage rates by race, age categories, and income levels.

At baseline, the indicators present a picture of health insurance **COVERAGE** in Kentucky that was consistent with, and in some cases better than, the nation as a whole.

FIGURE 1.1:
Insurance Coverage by Type for Kentucky and the U.S., 2012 (all ages)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the non-institutional population in the 2012 ACS using the Public Use Microdata Sample Files. Insurance types are mutually exclusive. Since some people have multiple sources of coverage, a primary coverage hierarchy was used.

BASELINE MEASURES

Health Insurance Coverage by Type

Figure 1.1 presents the **distribution of the population by type of health insurance coverage** (employer, individual, Medicaid/CHIP, and Medicare), along with estimates of uninsurance. Kentucky's distribution of coverage in 2012 was similar to national coverage rates for employer-based coverage (51.2% and 51.4% respectively) and for Medicaid/CHIP (13.4% for both Kentucky and the United States). Kentucky had a slightly higher proportion of the population covered by Medicare, while individual (self-purchased) coverage was slightly higher nationally than in Kentucky. At baseline, the rate of uninsurance for the U.S. was higher (14.7%) than in Kentucky (13.6%). In Figure 1.1 (and in all figures in this report), estimates that show statistically significant differences between Kentucky and the U.S. are marked with asterisks.

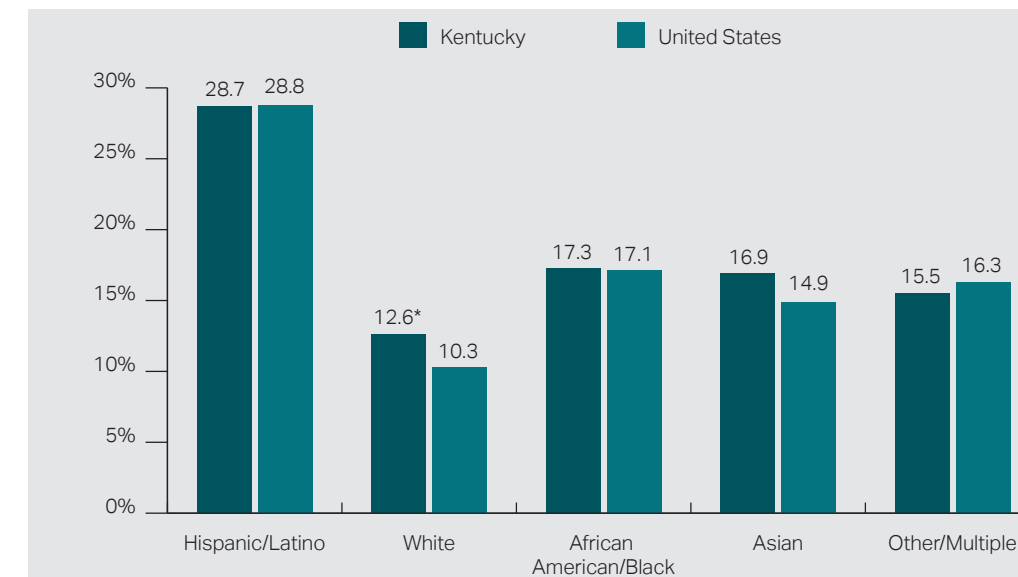
Another measure of coverage, **underinsurance**, can occur regardless of coverage status or type. While there are various ways to define underinsurance, for this study we use the definition of a family spending 10% or more of its annual household income on healthcare (premiums, deductibles,

and out-of-pocket expenses) during any given year.^{2,3} SHADAC uses 10% of annual household income spent on healthcare based on the definition used by the National Center for Health Statistics (NCHS).⁴ SHADAC analysis of data from the pooled 2012 and 2013 CPS shows no significant difference in the underinsured rate between Kentucky and the U.S. average, with 18.4% of Kentuckians (of all ages) being underinsured compared to 19.8% of the U.S. population. This will be an important metric to assess over time as individuals who are newly insured from kynect, or as a result of the Medicaid expansion access healthcare services. For example, if many Kentuckians chose high deductible plans, uninsurance rates may decline but underinsurance may rise.

Uninsured Rates by Demographic Categories

Figures 1.2 through 1.5 present **pre-ACA uninsured rates by race/ethnicity, age, income category, and gender** for Kentucky and the U.S.

Underinsurance is defined in this study as the percentage of people whose family spends 10% or more of their income on healthcare in a given year. In 2013, Kentuckians were underinsured at about the same rate as the rest of the country, with **18.4%** of Kentuckians being underinsured, compared to a national average of **19.8%**.

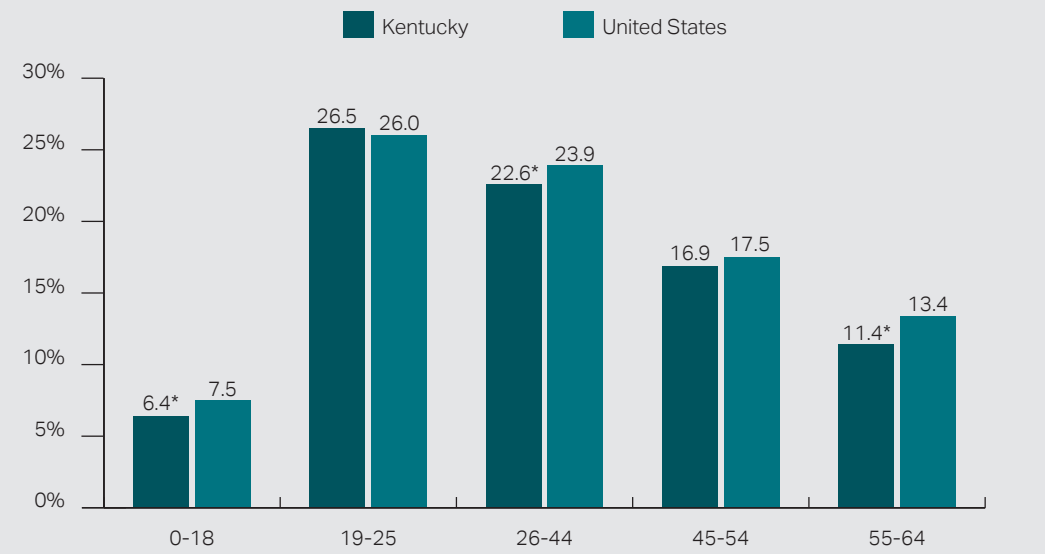


*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the non-institutional population in the 2012 ACS using the Public Use Microdata Sample Files. The race categories reported are mutually exclusive. Hispanic includes all people reporting this ethnicity; all other Race/Ethnicity categories exclude Hispanic. People reporting more than one race are included in Other/Multiple.

FIGURE 1.2:
Uninsured Rates by Race/Ethnicity for Kentucky and the U.S., 2012 (all ages)

DOMAIN #1: HEALTH INSURANCE COVERAGE

FIGURE 1.3:
Uninsured Rate by Age
Category for Kentucky
and the U.S., 2012
(all ages)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the non-institutional population in the 2012 ACS using the Public Use Microdata Sample Files.

The Hispanic/Latino population had the highest rate of uninsurance in Kentucky (28.7%) followed by African Americans (17.3%), Asians (16.9%), and individuals of other or multiple races (15.5%). Kentucky rates of uninsurance by race/ethnicity were similar to the U.S. average with one exception. We found a significant difference between Kentucky and the nation for the white population; 12.6% were uninsured in Kentucky compared to 10.3% nationally (see Figure 1.2).

Figure 1.3 provides estimates of percent uninsured by age category. Young adults (ages 19-25) had the highest rate of uninsurance (26.5%) in Kentucky followed by adults ages 26-44 (22.6%), 45-54 (16.9%), and 55-64 (11.4%). Children (ages 0-18) had the lowest uninsured rate of any age category, at 6.4%. We found differences among age categories; with statistically lower Kentucky rates for children age 0-18 (6.4% and 7.5% respectively), adults age 26-44 (22.6% and 23.9% respectively), and adults age 55-64 (11.4% and 13.4%).

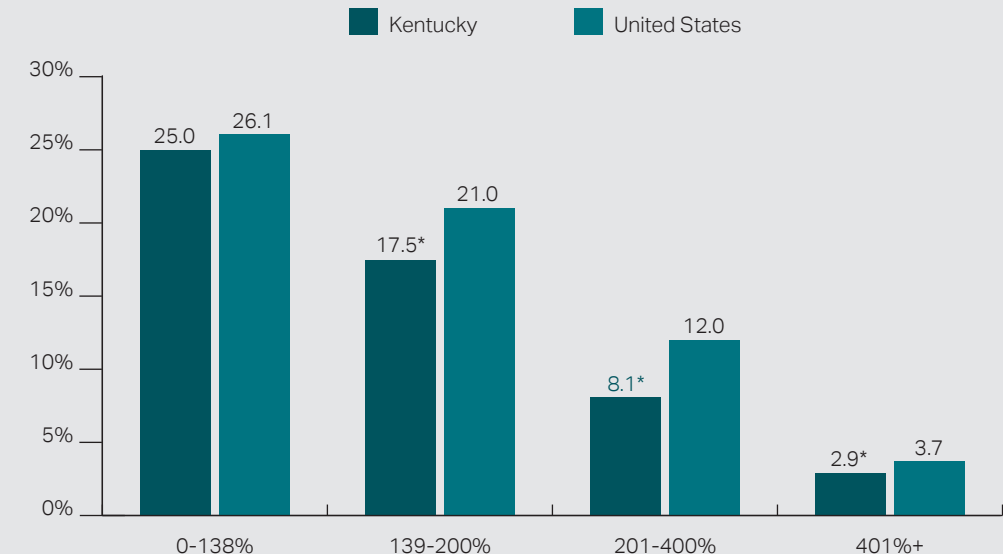
Figure 1.4 presents uninsured rates by income categories. We use the Federal Poverty Guide-

lines (FPG) and ACA income eligibility cutoffs for our income categories. In 2012, for a 1-person household, 100% of the FPG was \$11,170 and 138% of FPG was \$15,415.⁵ The categories are adjusted for family size; in 2012, 100% of the FPG for a 4-person household was \$23,050 and 138% of FPG was \$31,809.

As Figure 1.4 shows, as incomes rise, uninsurance rates decline, with the highest rate of uninsurance among the population with the lowest income (from 0-138% of the FPG), both for Kentucky and the U.S. For the lowest-income category, uninsured rates were not significantly different in Kentucky compared to the U.S. However, for the higher income categories (139-200% and 201-400%), Kentucky had significantly lower uninsured rates than the rest of the country.

Figure 1.5 presents baseline uninsured rates by gender. In 2012, Kentucky males were more likely to be uninsured (14.8%) than females (12.4%). Consistent with overall uninsured rates, the rate for both males and females was significantly lower in Kentucky than in the nation as a whole.

FIGURE 1.4:
Uninsured Rates by
Income as Percent
of Federal Poverty
Guidelines for Kentucky
and the U.S., 2012 (all
ages)

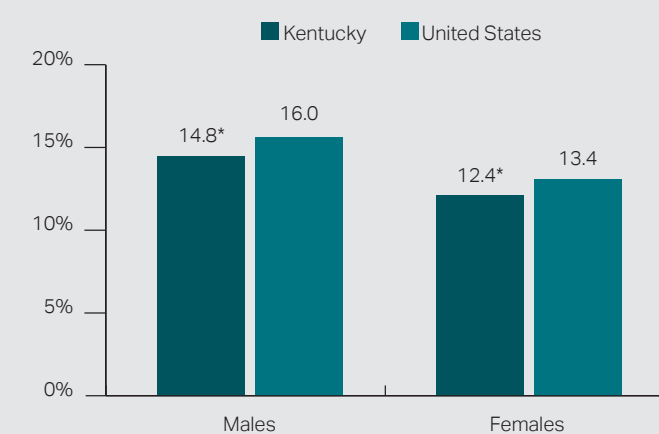


*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the non-institutional population in the 2012 ACS using the Public Use Microdata Sample Files. The family income uses the Health Insurance Unit (HIU), which may differ from the Census definition of a family. The HIU defines a family based on those individuals who would most likely be considered a "family unit" in determining eligibility for public or private coverage. This definition of a family is narrower than the one used by the Census Bureau.

Employer Offer Rates

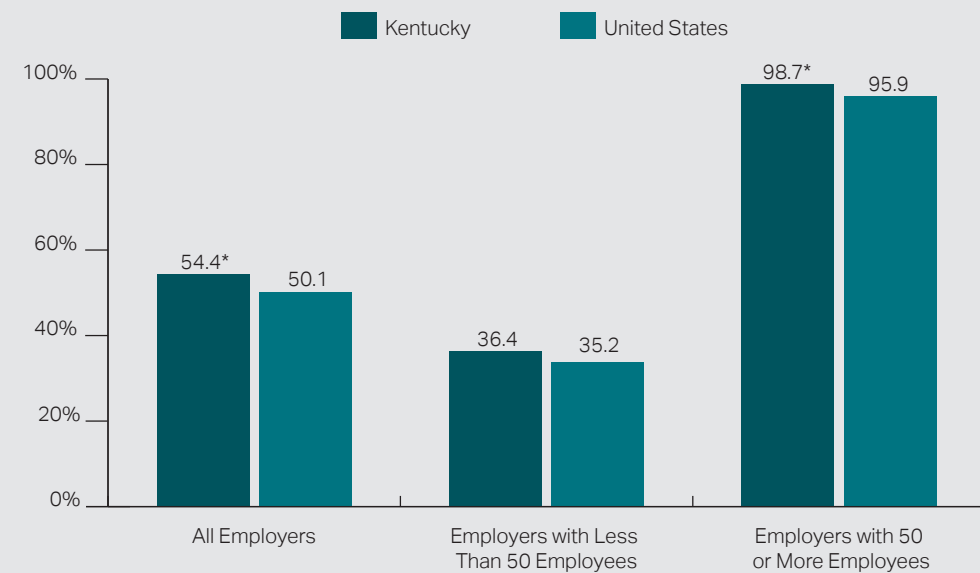
Most people in the U.S. have health insurance coverage that is sponsored through their employer. Kentucky's rate of employer-sponsored insurance (51.2%) is similar to the national rate of 51.4% (see Figure 1.1). When looking at **employer offer rates** in 2012, 54.4% of Kentucky's private sector employers offered health insurance to employees compared to the national offer rate of 50.1% (Figure 1.6). Offer rates do vary by employer size, with smaller firms less likely to offer coverage. Figure 1.6 shows that in 2012, 36.4% of Kentucky small employers (less than 50 employees) and 98.7% of those with 50 or more workers offered coverage. For small firms, there was no significant difference between Kentucky and the U.S., while for large employers, Kentucky firms were significantly more likely to offer health insurance than the national average.

FIGURE 1.5:
Uninsured Rates by
Gender for Kentucky
and the U.S., 2012
(all ages)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the non-institutional population in the 2012 ACS using the Public Use Microdata Sample Files.

FIGURE 1.6:
Offer Rates by Private Sector Employers for Kentucky and the U.S., 2012



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the 2012 MEPS-IC. Estimates are for percent of private sector establishments that offer coverage by firm size.

DOMAIN #2: ACCESS

The U.S. Institute of Medicine defines healthcare access as “the timely use of personal health services to achieve the best health outcomes.”⁶ The concept of access comprises many elements, including physical/geographic, infrastructure, workforce, financial, and others. Even among those with health insurance coverage, barriers to care can include cost and coverage-related issues as well as provider-related barriers and other access problems.⁷ To capture some of this complexity, we use 12 indicators to measure healthcare access in this study - more indicators than in any other study domain. For the access domain, seven indicators are sourced from the National Health Interview Survey (NHIS), four measures from the National Survey on Drug Use and Health, and one indicator from the Behavioral Risk Factor Surveillance System (BRFSS). We include data for children under age 19 as well as non-elderly and elderly adults where data are available. As a re-

minder, this report includes baseline data measuring the pre-ACA status of access to care (all data in the access domain are from 2012 or pooled data from 2011-2012).

Overall, the indicators present a baseline picture of healthcare access in Kentucky that was behind the nation as a whole. For several indicators, there were no substantial differences between the state and the nation, but for a few key measures, Kentucky fared significantly worse than the national average. In only one case did Kentucky appear to have higher access to care than the U.S. as a whole (having a provider visit in the past year, see Figure 2.3). Having a higher rate of provider visits also suggests other implications besides access, for example a higher underlying need for care due to health status (health status issues are explored in more depth under the “Health Outcomes” domain, starting on page 19).

Overall, the indicators present a baseline picture of healthcare ACCESS in Kentucky that lagged behind the nation as a whole.

BASELINE MEASURES

Usual Source of Care

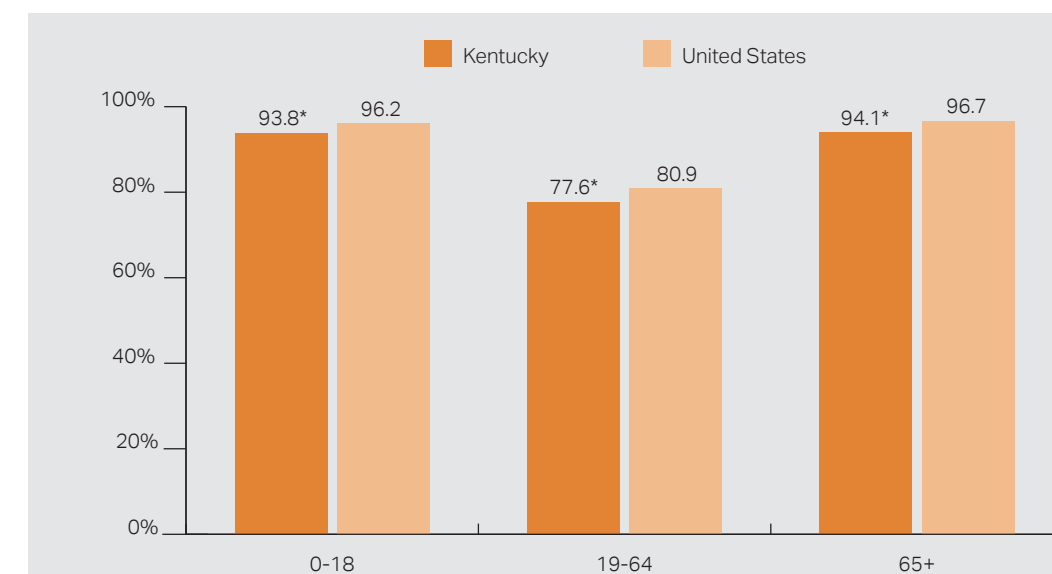
Having a **usual source of care** is “a summary measure of adequate access to primary care”⁸ and some studies have found it to be even more important for health outcomes than having health insurance, in specific cases.⁹ The measure we use is from the National Health Interview Survey (NHIS), which asks, “Is there a place you usually go when you are sick or need advice about your health?” We also use responses to the follow-up question: “What kind of place is it?” to make sure that emergency department visits were not considered to be a usual source of care.

Figure 2.1 presents Kentucky’s pre-ACA level of usual source of care by age and compares it to the U.S. as a whole. Within Kentucky, elderly adults (ages 65+) and children (ages 0-18) were most likely to have a usual source of care (approximately 94% for both categories), with 77.6% of non-elderly adults (ages 19-64) having a usual source. Across all age categories, Kentuckians were less likely to report having a usual source of care compared to the U.S. average. The differences were statistically significant in all age categories, with the largest gap between Kentucky and the nation being in the non-elderly adult population (ages 19-64).

Prescription Drug Affordability

Another indicator of access is **changes in prescription drug usage due to cost**. This is a summary measure including: asking the doctor for cheaper medications, delaying refills, taking less medication than prescribed, skipping dosages, using alternative therapies, and/or buying medications out of the country. This measure indicates whether people are making decisions based on cost that may adversely affect their health. For this indicator, we present estimates for adults (ages 19+).

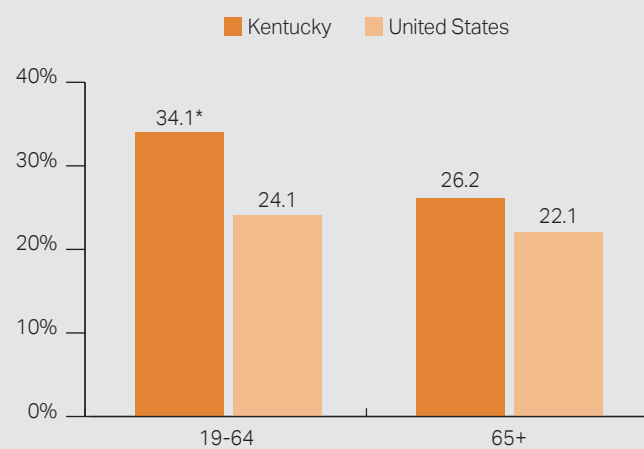
Kentucky’s baseline data compared to the U.S. is presented in Figure 2.2. Non-elderly adult Kentuckians (ages 19-64) were significantly more likely than elderly Kentuckians to alter prescription medication use due to cost, suggesting that Medicare likely closes the gap for the elderly. Non-elderly adult Kentuckians were also more likely to alter medications compared to the national average for non-elderly, and the difference of 10 percentage points was statistically significant. For those over age 65, the rate in Kentucky was also higher than the national average, but the difference was not statistically significant. One reason why even large differences sometimes do not show up as statistically significant when



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center.

FIGURE 2.1:
Usual Source of Care by Age Category for Kentucky and U.S., 2012 (all ages)

FIGURE 2.2:
Skipping, Delaying, or
Altering Prescription
Drug Use Due to Cost
for Kentucky and U.S.,
2012 (ages 19+)

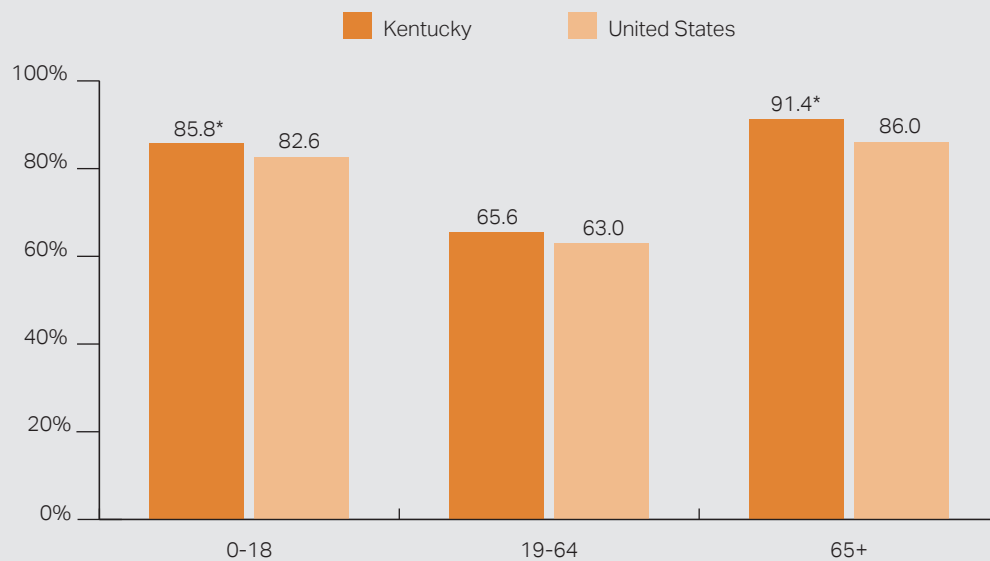


*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center.

within the population, Kentucky children (under age 19) and elderly adults (ages 65+) were **significantly more** likely to have seen a provider, compared to those same age categories nationally. The Kentucky-U.S. difference for non-elderly adults (19-64) was not significant. Figure 2.3 presents the age category data.

We also examine the prevalence of **visits to an emergency department (ED) within the past year** (again, 2012 data for pre-ACA baseline). According to the Agency for Healthcare Research and Quality (AHRQ), "ED utilization reflects the greater health needs of the surrounding community and may provide the only readily available care for individuals who cannot obtain care elsewhere. Many ED visits are 'resource sensitive' and potentially preventable, meaning that access to high-quality, community-based healthcare can prevent the need for a portion of ED visits."¹⁰

FIGURE 2.3:
Provider Visit in Past
Year by Age Category for
Kentucky and U.S., 2012



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center.

analyzing subpopulations is that the level of uncertainty may be relatively high because of small sample sizes.

Health Services Use

Having a visit with a healthcare provider during the past year is another way to gauge access to healthcare. For this measure, we include **visits to a general provider in the 12 months** preceding the survey. Baseline results for this indicator show that, for all ages, 73.8% of Kentuckians had a provider visit compared to 70.8% for the U.S. as a whole, but this difference was not statistically significant. However, when we look at age categories

Figure 2.4 presents the 2012 ED visit data by age categories; the Kentucky-U.S. difference is statistically significant for all age categories. Elderly Kentuckians were the most likely to have an ED visit, at 35.3%, followed by non-elderly adults (30.2%), and children (27.8%). This measure stands out as a notable difference between Kentucky and the U.S. average, at baseline. For all ages, 30.4% of Kentuckians had an ED visit, compared to 19.0% across the U.S., and this 11.4 percentage point difference is significant (not shown in graph). Emergency department use is an expensive way to treat non-emergency cases, and many ED visits are likely preventable if people have access to primary care.

Dental care is an important part of overall healthcare, and access to dental care visits is a measure of interest for this study. We use the BRFSS to track the percentage of **adults who had no dental visit in the past year**. At baseline (2012 data), 39.7% of adults in Kentucky reported not having a dental visit in the past year, compared to 32.8% of adults across the U.S. (no graph shown).

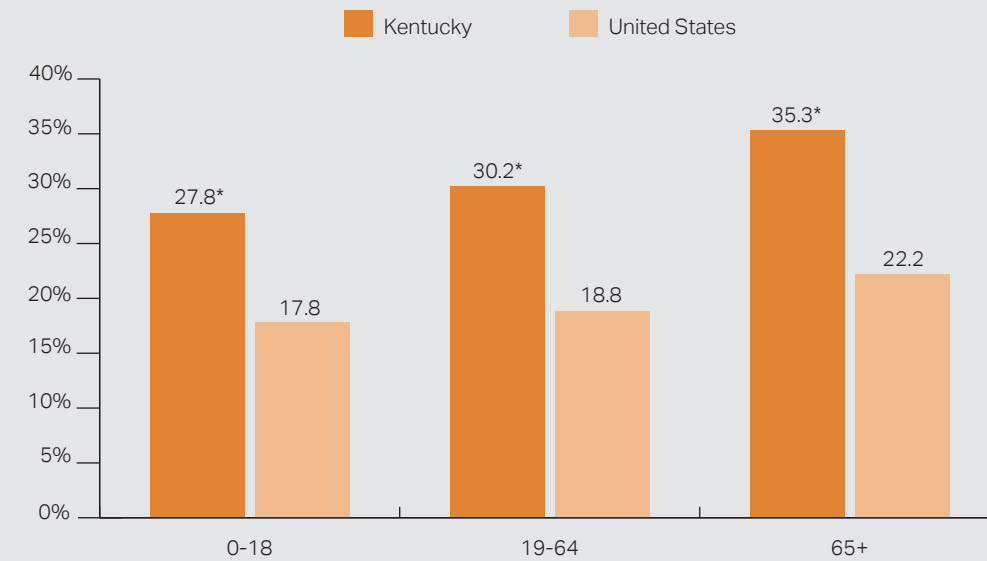
Provider Availability

Being able to find a doctor when needed is an important component of health access. For this measure, 94.8% of Kentuckians surveyed in 2012 said that they were able to find a doctor when needed, and this was not statistically different from the national rate of 96.5% (no graph shown). There were no statistically significant differences in this indicator across age categories.

When seeking medical care, some people face barriers with **providers not accepting their insurance coverage**. At baseline, there was no overall difference between Kentucky and the U.S. in the rates of patients reporting that providers would accept their coverage, with 96.5% of Kentuckians reporting acceptance and 97% nationally (no graph shown). The one exception is among children (ages 0-18), where the difference between Kentucky (95.0%) and the U.S. (97.6%) was small but statistically significant. SHADAC should have access to data on another measure, **wait time to see a primary care provider** by early next year.

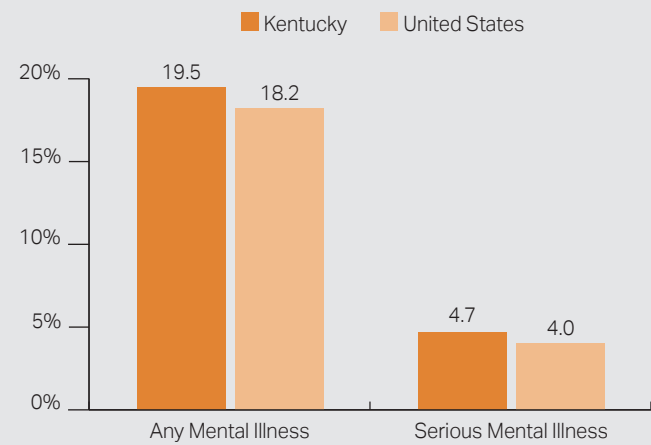
• **39.7%** of adults in Kentucky
• in 2012 reported not having a
• dental visit in the past year

FIGURE 2.4:
Emergency Department
Visits in the Past Year
by Age Category for
Kentucky and U.S., 2012



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center.

FIGURE 2.5:
Self-Reported Mental Illness for Kentucky and U.S., 2011-2012 (ages 18+)



Source: 2011 and 2012 National Survey on Drug Use and Health.

Mental Health/Substance Abuse

Those with mental illness and/or substance abuse problems have a specific need for healthcare services. In this section we present prevalence and use of services based on available state-level data.

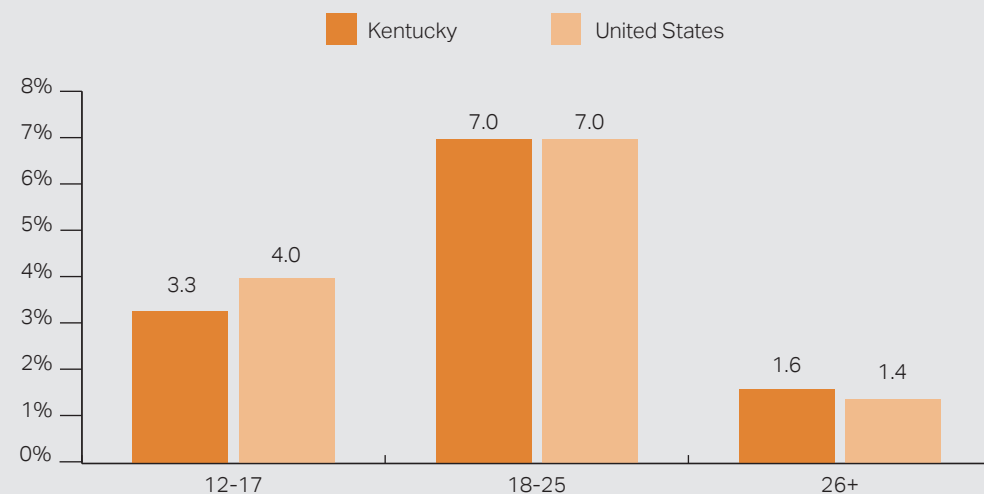
Substance abuse and the need for treatment are difficult to measure, but the U.S. Substance Abuse and Mental Health Services Administration annually conducts the National Survey on Drug Use and Health, to provide estimates of alcohol and drug addiction. Due to a limited sample size, 2011 and 2012 data are pooled in order to get state-level estimates.

We also use data from the National Survey on Drug Use and Health to report the **prevalence of any mental illness and serious mental illness**. Any mental illness is defined as “having any mental, behavioral, or emotional disorder in the past year that met DSM-IV criteria (excluding developmental and substance use disorders).” Serious mental illness is defined as “any mental, behavioral, or emotional disorder that substantially interfered with or limited one or more major life activities.”¹¹

At baseline (data pooled for 2011-2012), the prevalence of serious mental illness or any mental illness appears to be similar between Kentucky and the U.S. national average (statistical testing of differences was not possible in this case). Similarities between the U.S. and the state hold true across all available age categories (the data source only includes adults ages 18+). Figure 2.5 presents the data.

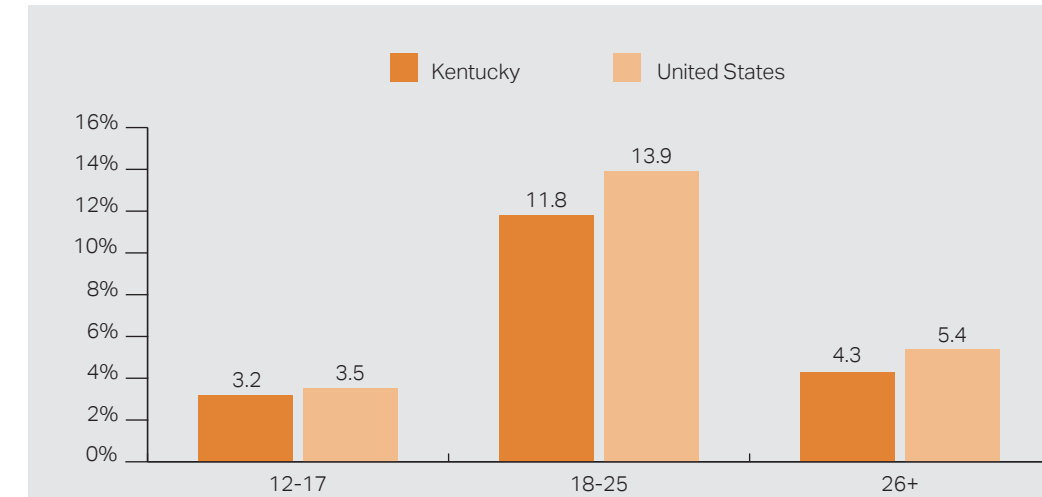
Substance abuse has emerged as a priority public health problem in Kentucky and in many other states. Among Kentuckians, those ages 18-25 have the highest rate of **unmet need for substance abuse treatment**, at 7%, followed by children ages 12-17 (3.3%) and adults ages 26 and older (1.6%).

FIGURE 2.6:
Needed but Did Not Receive Illicit Drug Abuse Treatment by Age Category for Kentucky and U.S., 2012 (ages 12+)



Source: 2011 and 2012 National Survey on Drug Use and Health.

The pattern is slightly different for unmet need for alcohol use, with 18-25 year-olds still having the highest unmet need, followed by adults ages 26 and over, and then children ages 12-17. The rates of people who needed but did not receive treatment for drug or alcohol addiction are quite similar between Kentucky and the U.S. Again in this case, statistical testing of differences was not possible, but survey results are presented in Figures 2.6 (drugs) and 2.7 (alcohol).



Source: 2011 and 2012 National Survey on Drug Use and Health.

FIGURE 2.7:
Needed but Did Not Receive Alcohol Drug Abuse Treatment by Age Category for Kentucky and U.S., 2011/2012 (ages 12+)

DOMAIN #3: COST

Healthcare costs are a topic of concern for many families, with out-of-pocket costs — including premiums, co-pays, and deductibles — varying by benefit plan. This is especially important in Kentucky, where 18.8% of the population is living below the poverty level, compared to 15.4% nationwide. Kentucky’s rate is among the highest in the country; the state ranks 45th for proportion of people living in poverty.¹² In this study we include six measures related to cost, primarily focused at the household level. We include one health system measure, a measure of hospital uncompensated care that is aggregated across all reporting hospitals in Kentucky. Our primary data sources for the metrics in the cost domain are from three large national surveys: the NHIS, the MEPS-IC, and the CPS. Our uncompensated care measure was obtained from

the Kentucky Hospital Association, as reported by Deloitte in its 2015 analysis on the first year of Kentucky’s Medicaid expansion.¹³ Our estimates in the cost domain cover all ages, except where noted.

Overall, the indicators present a baseline picture of healthcare costs in Kentucky that finds Kentucky being worse-off than the country as a whole in terms of cost-barriers to care. At the baseline, more Kentuckians had trouble paying medical bills and were more likely to delay or go without medical care due to cost. Family and individual insurance premiums from employer-based insurance in Kentucky were slightly higher than the U.S. average, but this difference was not statistically significant.

BASELINE MEASURES

Trouble Paying Medical Bills

Across all age categories, 49.1% of Kentuckians surveyed at baseline reported that their families had **trouble paying medical bills**, compared to 31.3% nationally (no figure shown). This 17.8 percentage point difference is statistically significant. The pattern held true across all age categories (Figure 3.1). This finding comes from SHADAC analysis of the NHIS, which asks, "In the past 12 months did [you/anyone in the family] have problems paying or were unable to pay any medical bills? Include bills for doctors, dentists, hospitals, therapists, medication, equipment, nursing home, or home care."

Uncompensated care provided by hospitals is another measure of inability to pay. The U.S. Department of Health and Human Services defines uncompensated care as "the unreimbursed cost of the care provided by hospitals to people who are uninsured or under-insured."¹⁴ For this study we use as baseline the figure reported by Deloitte's study of Kentucky's Medicaid expansion,¹⁵ with data originating from the Kentucky

Hospital Association. In the first three quarters of 2013, Kentucky hospitals provided \$1.9 billion in uncompensated care to patients. The American Hospital Association estimated that, among its member hospitals across the country (not all hospitals are members), uncompensated care totaled \$46.4 billion in 2013, or about 6% of total hospital expenses.¹⁶

Delayed or Foregone Care

Delaying or not getting needed medical care can be a major impediment to good health outcomes, and it can sometimes cause serious conditions to go undetected or to get worse by being left untreated – resulting in worse health status and higher treatment costs. Cost is a reason frequently cited for delaying or going without medical care. In 2012, 16.9% of Kentucky non-elderly adults and 11.7% of people of all ages reported **delaying needed care due to costs** (Figure 3.2). Both estimates were significantly higher than the U.S. as a whole (11.7% for non-elderly adults, and 8.4% for all age categories).

Figure 3.3 displays results for **going without needed care due to cost**. As with delayed care, Kentucky remains significantly worse-off than the U.S. for both age categories reported, with 14.4% of non-elderly adults and 10.0% of people from all age categories reporting that they needed medical care, but went without it because they could not afford care. The Kentucky-U.S. difference is statistically significant.

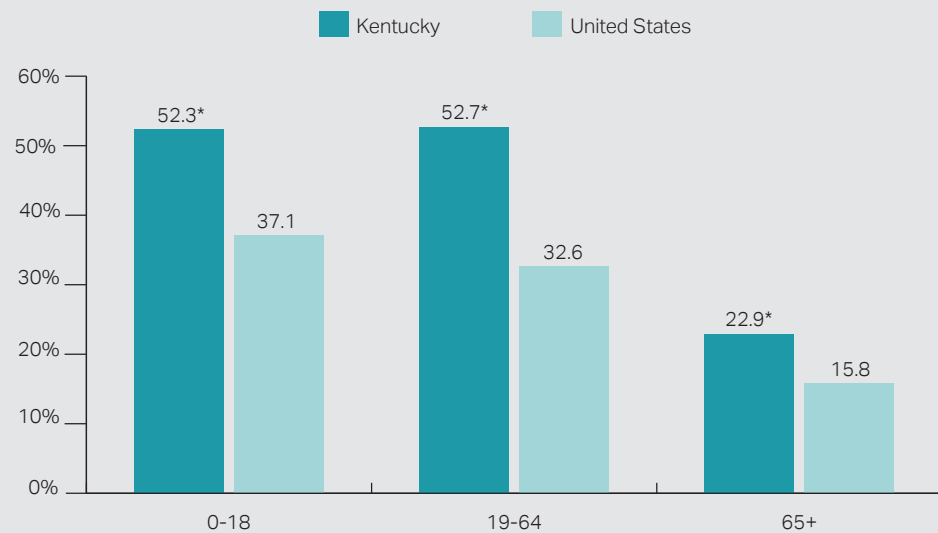
Healthcare Spending

Figure 3.4 provides estimates of **spending on out-of-pocket healthcare costs**. In 2013, the median rate of out-of-pocket spending on healthcare was \$1,100 in Kentucky compared to \$1,200 nationally. In 2012, the average family premium for employer-sponsored insurance in the private sector in Kentucky was \$15,734, and the individual premium averaged \$5,397 (no figure shown). None of these were significantly different than the national averages.

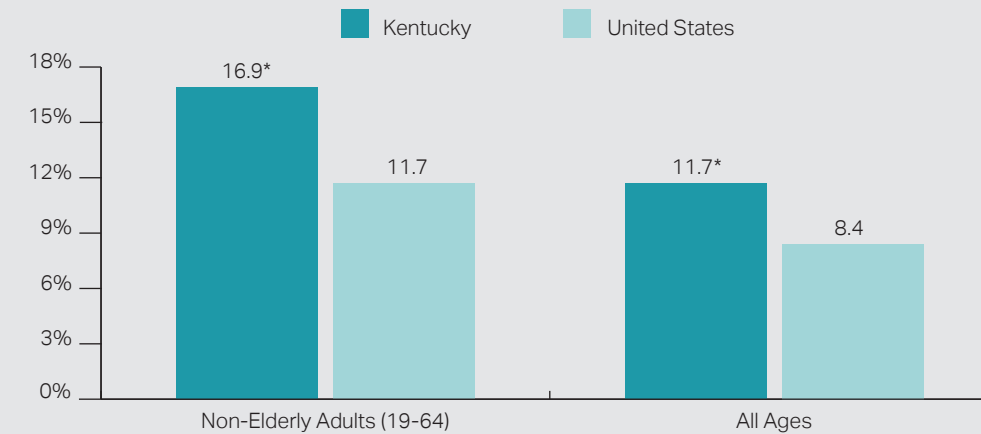
In the first three quarters of 2013, Kentucky hospitals provided **\$1.9 BILLION** in uncompensated care to patients.

Overall, the indicators present a baseline picture of healthcare **COST** in Kentucky that finds Kentucky being worse-off than the country in terms of cost-barriers to care.

FIGURE 3.1:
Trouble Paying Medical Bills by Age Category for Kentucky and the U.S., 2012 (all ages)

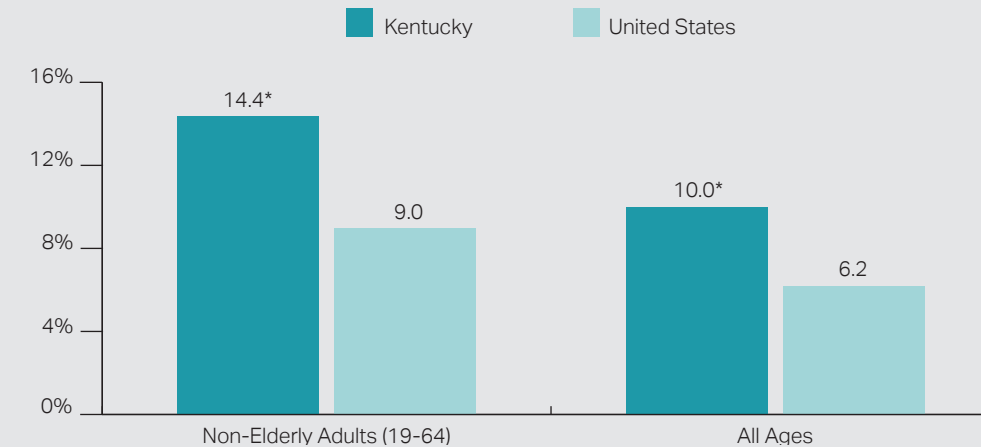


*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center. The estimate reports the percentage of people who delayed seeking medical care because of worry about the cost in the last year.



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center. The estimate reports the percentage of people who had trouble paying off medical bills in the last year or were currently paying off medical bills.

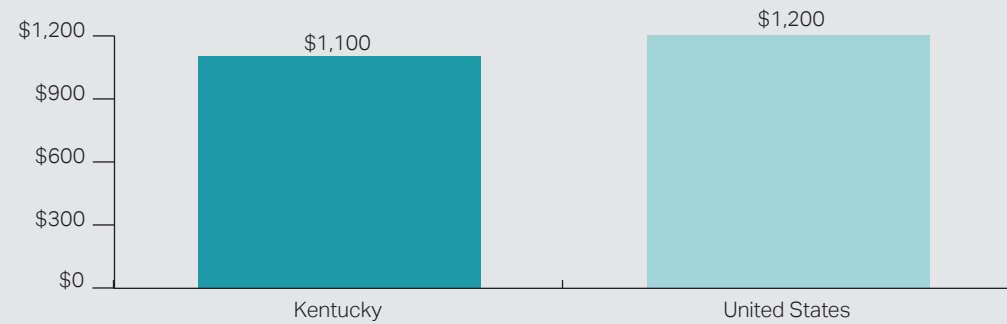
FIGURE 3.2:
Delayed Needed Care Due to Cost by Age Category for Kentucky and the U.S., 2012



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 NHIS using the SHADAC Data Center. The estimate reports the percentage of people who delayed seeking medical care because of worry about the cost in the last year.

FIGURE 3.3:
Went Without Needed Care Due to Cost by Age Category for Kentucky and the U.S., 2012

FIGURE 3.4:
Median Out-of-Pocket
Spending in Dollars for
Kentucky and the U.S.,
2013



Source: Estimates were based on SHADAC's analysis of the civilian non-institutional population in the 2013 CPS. Includes spending on premiums.

DOMAIN #4: QUALITY

Achieving improvements in the quality of health-care was a major initiative included in the ACA. There are a number of ways in which the law is focused on improving the quality of care, including avoiding preventable hospital readmissions, increasing the utilization of preventative care, and improving on a number of indicators associated with recommended health practices. We include nine metrics that relate to quality of care, focusing both on hospital quality and aggregate measures of preventative care utilization. For the quality domain, our data sources include the BRFSS, the Youth Risk Behavior Surveillance System (YRBSS) survey, the National Immunization

survey, and administrative data from Kentucky hospitals, Kentucky's vital statistics systems, and the Healthcare Cost and Utilization Project (HCUP) databases. Data in this domain cover all ages except where noted, and they are from years 2011, 2012 or 2013.

Overall, the indicators present a baseline picture of lower healthcare quality in Kentucky compared to that of the country as a whole. The baseline data for hospital quality indicators shows Kentucky having higher admissions for two out of three metrics, and a higher death rate for conditions that are considered low-risk for mortality.

BASELINE MEASURES

Hospital Readmission Rate

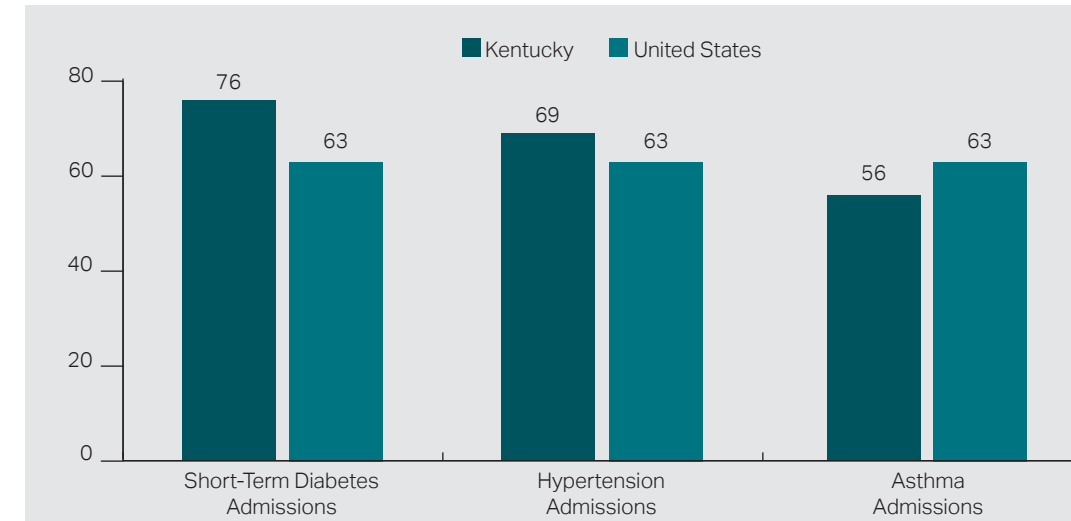
The national **hospital readmission rate**, which comes from HCUPnet data, was 14% in 2011. State-level data for Kentucky was not available at the time this report was written.

Potentially Preventable Hospital Admissions

According to the Agency for Healthcare Research and Quality (AHRQ), "one area where higher quality and lower costs coincide is potentially preventable hospital admissions—inpatient stays that could be prevented with high-quality primary and preventive care. High rates of these potentially preventable hospital admissions identify areas where possible improvements in the health care delivery system could be made to enhance patient outcomes and decrease costs."¹⁷ In this study, we look at three conditions that are

potential over-hospitalizations: diabetes, hypertension, and asthma. The data for these come from the 2011 Kentucky Cabinet for Health and Family Services Prevention Quality Indicators report.¹⁸ Due to the nature of these data, statistical significance testing comparing Kentucky and U.S. rates was not performed for these measures.

The **diabetes short-term complications admissions rate per 100,000 adults** is shown in Figure 4.1. At the baseline year, 2011 (latest available data for these measures), Kentucky had a slightly higher short-term admissions rate per 100,000 adults than the U.S. overall. Across all ages, 76 out of 100,000 adults were admitted for short-term admissions for diabetes complications in Kentucky, and 63 out of 100,000 adults were admitted in the U.S. as a whole.



^ Sources: 2011 Kentucky Cabinet for Health and Family Services (CHFS) Prevention Quality Indicators (PQI) Report, Diabetes Short-Term Complications Adult (18+) Admission Rate (PQI 1); Kentucky CHFS PQI Report, Hypertension Adult (18+) Admission Rate (PQI 7); and Kentucky CHFS Prevention PQI Report, Asthma in Younger Adults (ages 18-40) Admission Rate (PQ15).

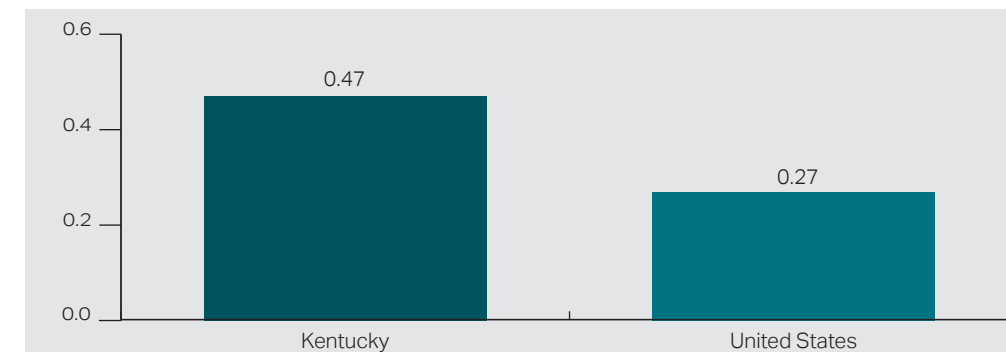
FIGURE 4.1:
Potentially Preventable
Hospital Admissions:
Diabetes Short-Term
Admissions, Hypertension
Admissions, and Asthma
Admissions for Kentucky
and the U.S., 2011[^]

Hypertension admissions rates per 100,000 adults, as indicated in Figure 4.1, for Kentucky and the U.S. were similar. This is also a population-based measure, with 69 hypertension admissions per 100,000 adults in Kentucky, and a slightly lower 63 in the U.S. The exception to the pattern of potentially **preventable hospital admissions** was for **asthma** among younger adults, shown in Figure 4.1. At baseline, Kentucky had a lower rate (56 per 100,000 younger adults), compared with the rate for the country as a whole, which was 63 per 100,000.

Death Rate in Low Mortality Admissions

Figure 4.2 shows the **death rate per 1,000 people for patients of all ages that are hospitalized for conditions that should not typically**

result in mortality. All cases treated in hospitals are classified according to groups called diagnosis-related groups, or DRGs. DRGs are used to help determine how much a hospital gets paid for its services, adjusted for severity and other factors.¹⁹ Many DRGs (e.g., eye disorders, childbirth, knee procedures) are associated with low mortality rates and are used as one indicator of hospital quality; hospitals with high mortality rates associated with these low-mortality DRGs may have lower quality care.²⁰ The mortality rate presented here is risk-adjusted to take into account the patient's previous health status. Figure 4.2 shows that at baseline, Kentucky had a higher mortality rate for "low mortality DRGs" than the U.S. as a whole, with a rate of 0.47 per 1,000 Kentucky patients versus 0.27 for the U.S.

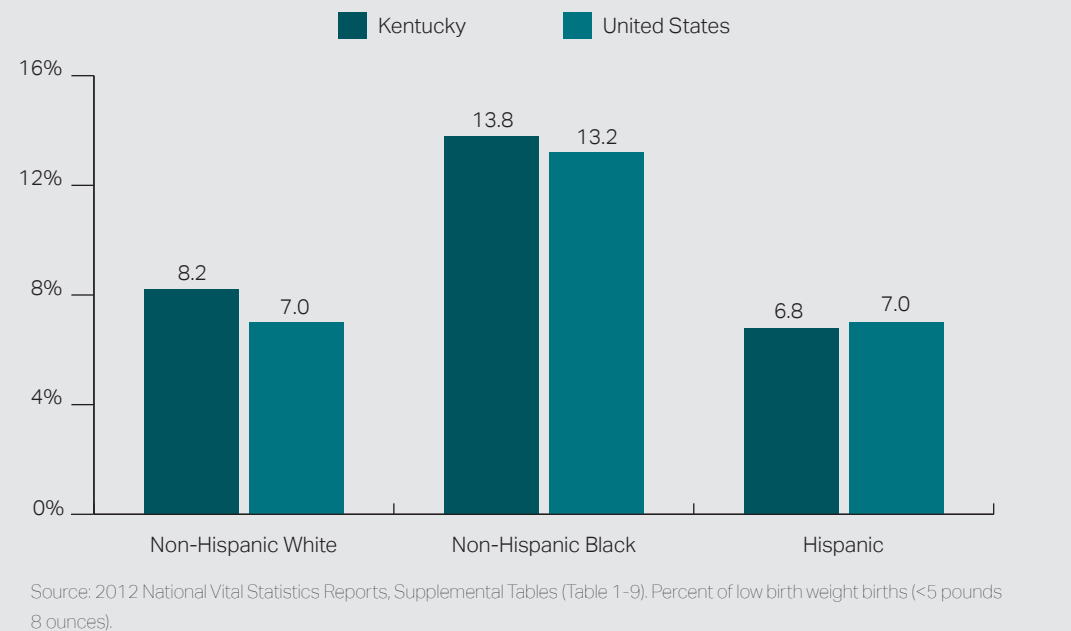


Source: Kentucky MONAHRQ Quality Indicators. The estimate reports the Dying in the Hospital While Getting Care for a Condition that Rarely Results in Death Rate cases.

FIGURE 4.2:
Mortality Rate in Low
Mortality DRGs (per 1,000
cases) for Kentucky and
the U.S., 2011 (all ages)

Overall, the indicators present a baseline picture of lower healthcare **QUALITY** in Kentucky compared to that of the country as a whole.

FIGURE 4.3:
Low Birth Weight for Births by Race/Ethnicity for Kentucky and the U.S., 2012



Low Birth Weight

According to the Centers for Disease Control and Prevention (CDC), **low birth weight** (defined as less than 5 pounds, 8 ounces) is “the single most important factor affecting neonatal mortality and a significant determinant of post-neonatal mortality. Low birthweight infants who survive are at increased risk for health problems ranging from neurodevelopmental disabilities to respiratory disorders.”²¹ The U.S. Government has set a national target to reduce low birth weight to 7.8% of live births by 2020.²²

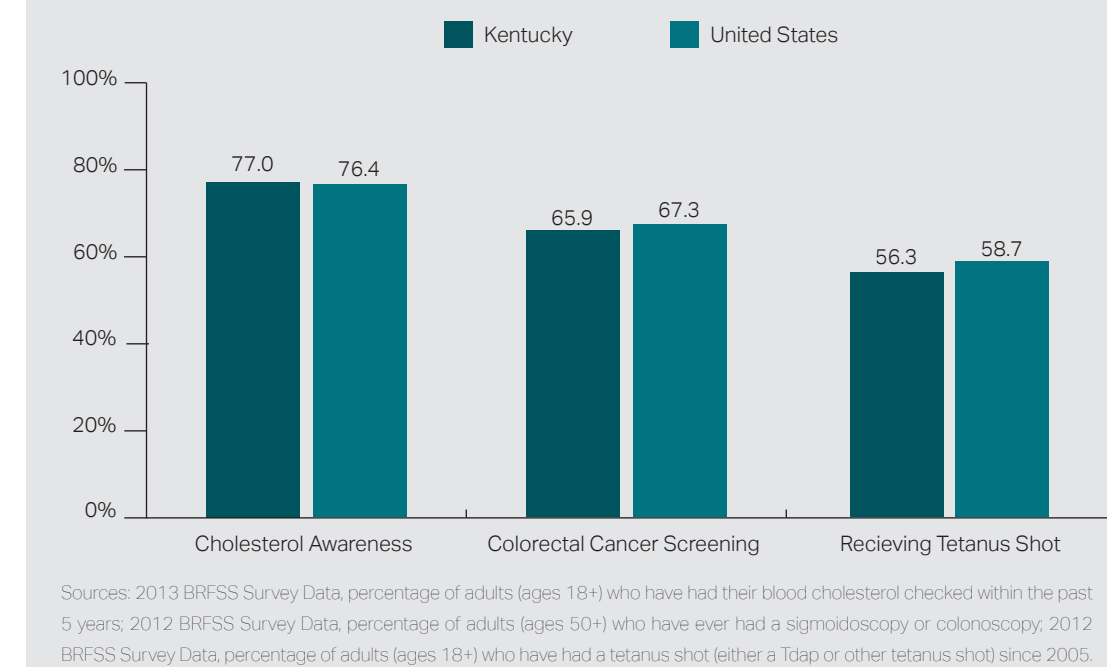
At baseline (2012), 8.7% of live births in Kentucky were measured as having low birth weight, compared to 7% nationally (not shown in figure). Figure 4.3 shows disaggregated data for low birth weight by race/ethnicity for the U.S. and Kentucky in 2012. At baseline, non-Hispanic blacks had the highest rate of low birth weight in Kentucky (13.8%), followed by non-Hispanic whites (8.2%) and the Hispanic population (6.8%). Kentucky’s rates are fairly similar to national ones.

Preventive Care

Preventive care utilization for adults is shown in Figure 4.4 for 3 services – **cholesterol aware-**

ness, colorectal cancer screening, and receiving tetanus shot. Cholesterol awareness measures the percentage of adults who have had their blood cholesterol checked within the last 5 years. Colorectal cancer screening reports the percentage of adults ages 50 or older who have ever had a sigmoidoscopy or colonoscopy, and the tetanus shot indicator reports the percentage of people who have had a tetanus shot (either a Tdap or other tetanus shot) since 2005. Across indicators, the percentages of adults receiving these preventive services were similar for Kentucky and the U.S. In Kentucky, 77% of adults reported having their blood cholesterol checked within the last five years, compared to 76.4% in the country as a whole. The percentages of adults receiving colorectal cancer screening in the U.S. and in Kentucky in 2012 were also very similar: 65.9% adults over 50 were screened in Kentucky and 67.3% were screened in the U.S. as a whole. Lastly, the percentages of adults receiving a tetanus shot in 2013 in the U.S. and in Kentucky were very close, at 56.3% in Kentucky and 58.7% in the U.S. Because the source used for these measures did not include measures of uncertainty, no statistical testing was performed.

FIGURE 4.4:
Preventive Care: Blood Cholesterol Check in Past 5 Years (2013), Colorectal Cancer Screenings (2012), and Tetanus Shot since 2005 (2013), for Kentucky and the United States[^]



Unprotected Sex: High School Students

The 2013 YRBSS Survey provides estimates of rates of **unprotected sex among high school students who reported that they were sexually active.** This was a metric identified by the Foundation as an important part of the population health and prevention measures. In addition, the federal government’s Healthy People 2020 Goals include reduction in ad-

olescent pregnancy rates as well as “increasing the proportion of females at risk of unintended pregnancy or their partners who used contraception at most recent sexual intercourse.”²³ Figure 4.5 provides a snapshot of the 2013 baseline data for this variable, by gender, for the U.S. and Kentucky. Although the percent of females who engaged in unprotected sex in Kentucky was 18.6% but only 15.7% nationally, this difference was not statistically significant.

FIGURE 4.5:
Unprotected Sex among Currently Sexually Active High School Students by Gender for Kentucky and the U.S., 2013

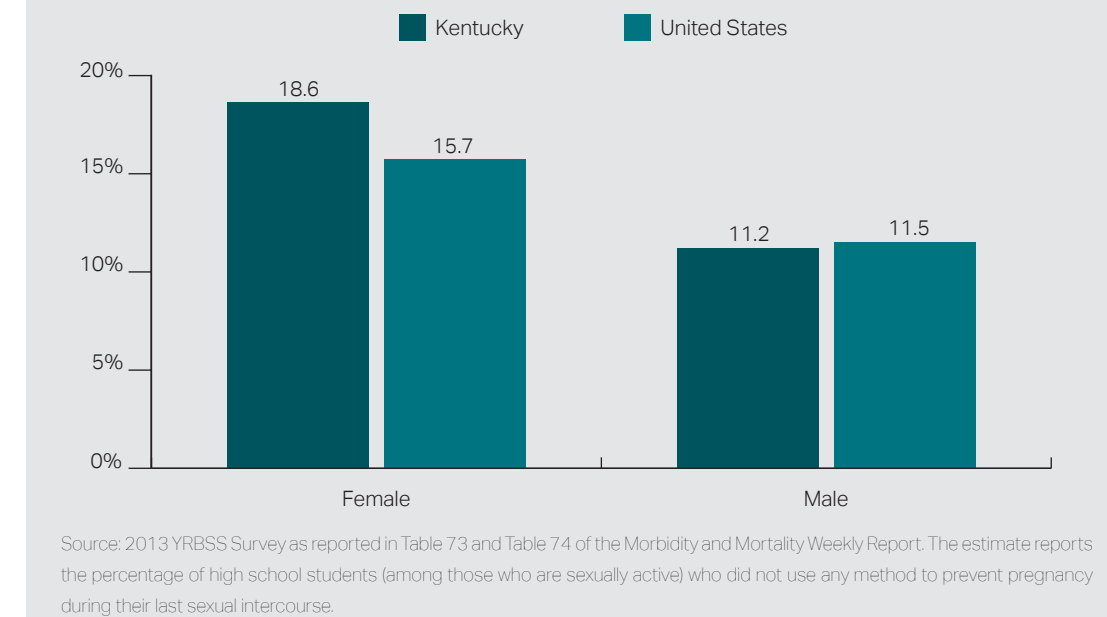
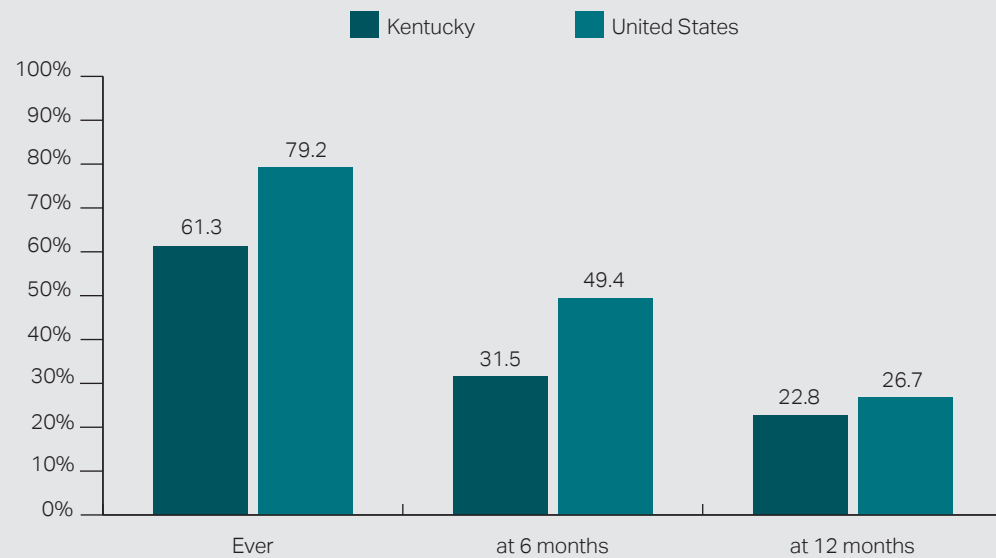


FIGURE 4.6:
Breastfeeding Rates
for Newborn Infants for
Kentucky and the U.S.,
2011



Source: 2011 National Immunization Survey as reported in the 2014 National Breastfeeding Report Card. The estimate reports the percentage of babies who were reported as being breastfed ever, at 6 months, or at 12 months.

Breastfeeding Rates

Because of the positive effects of breastfeeding on the health of the mother and baby,²⁴ the U.S. Government has set national goals to increase the proportion of infants who are breastfed, with a goal (by 2020) of 81.9% ever being breastfed, 60.6% being breastfed at 6 months, and 34.1% being breastfed at 1 year of age.²⁵ Figure 4.6 shows the **percentage of infants who were reported as ever being breastfed, and those breastfed at 6 and 12 months**, taken from the 2014 National Breastfeeding Report Card and 2012 National Immunization Survey. Overall, the

U.S. had a 79.2% breastfeeding rate for newborn infants, and Kentucky had a 61.3% breastfeeding rate in 2012. The higher rate in the U.S. compared to that of Kentucky's is more pronounced for breastfeeding rates at 6 than at 12 months. The U.S. had a breastfeeding rate of 49.4% for 6-month-old infants, and 26.7% for 12-month-old infants. Kentucky had a breastfeeding rate of 31.5% for 6-month-old infants, and 22.8% for 12-month-old infants. Because the 2014 National Breastfeeding Report Card did not include measures of uncertainty, no statistical testing was performed.

DOMAIN #5: HEALTH OUTCOMES

Health outcomes are measures of an individual's or population's health status. Outcomes are determined by a combination of factors including genetics, behaviors, environmental exposures, social factors, and healthcare services and policies.²⁶ Although these determinants are complex, all the outcome measures selected here are at least partially influenced by the presence, accessibility, and quality of health services available to a population. Some health outcomes are very slow to show change at the population level, even with improved health services or access, but these are ultimately the metrics that are used to judge how well a system is working. In this study, we use four

measures of health outcomes, with data from the BRFSS and from CDC vital statistics data. In the health outcomes domain, the poor/fair health and premature death measure are 2012 estimates, the obesity rates are from 2013, and the Chronic Disease Prevalence measure is from combined 2011 and 2012 data. The metrics here are focused on adults ages 18 and older, except where noted.

Together, the indicators present a baseline picture of health status in Kentucky that was significantly worse than the national average. Kentuckians had higher rates of obesity and chronic disease, lower levels of self-reported health, and higher rates of premature death than the U.S. on average.

• Together, the indicators
• present a baseline picture
• of **HEALTH STATUS**
• in Kentucky that was
• significantly worse than
• the national average.

BASELINE MEASURES

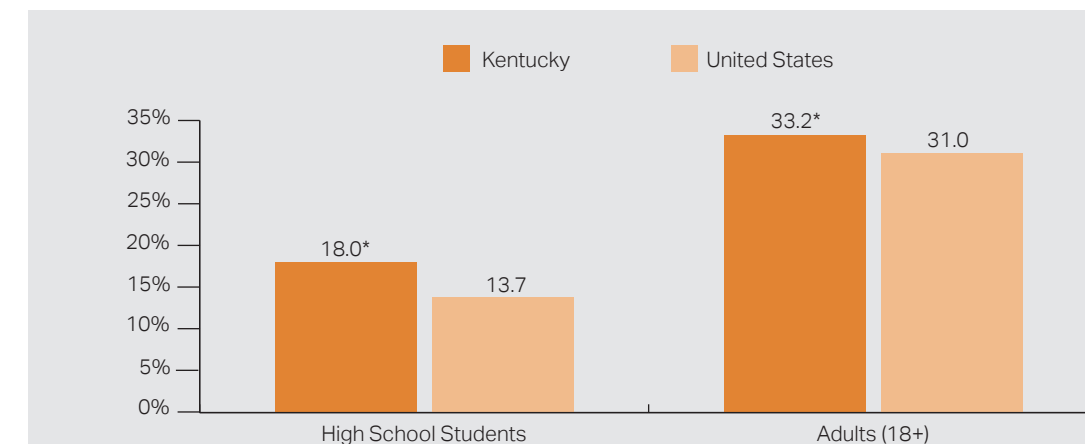
Obesity

Obesity is a concern for population health, as it is a risk factor for heart disease, diabetes, and other chronic diseases. Obesity is prevalent both among adults and children in the U.S., though rates among children have stabilized in recent years.²⁷ Figure 5.1 shows estimates of the **prevalence of obesity** in 2013. Approximately a third of adults (ages 18 and older) in Kentucky were classified as obese in 2013, as were more than 18% of Kentucky high school students. For both age categories, Kentucky's rates were statistically significantly higher than for the U.S.

Poor/Fair Health

Another metric of health status is based on individual self-reporting of health. Previous research has consistently shown **self-reported health status** from surveys to be a valid predictor of mortality.²⁸ The BRFSS Survey asks, "Would you say that in general your health is excellent, very good, good, fair, or poor?" In 2012, 23.1% of adults surveyed in Kentucky responded to this question by reporting that their health was either poor or fair (no figure shown). This is statistically significantly higher than the U.S. average, which was 13%.

• In 2012, more than **23%** of
• adults in Kentucky reported
• being in poor or fair health,
• compared to just **13%**
• nationally.

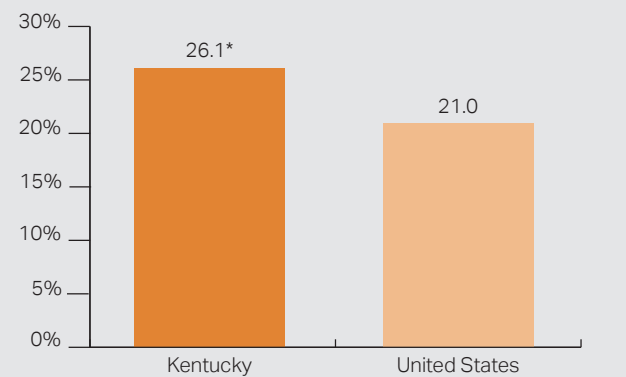


*Difference is statistically significant at the 95% level. Source 1: SHADAC analysis of the 2013 YRBSS. The estimate reports the percentage of high school students who were above the 95th percentile for Body Mass Index, based on gender- and age-specific reference data from the 2000 CDC growth charts. Source 2: SHADAC analysis of the 2013 BRFSS Survey Data. The estimate reports the percentage of adults with a Body Mass Index of over 30. The 2013 BRFSS Survey Data estimates were used here (instead of 2012) because the obesity rate for high school students is not available in 2012 and we wanted to include comparable rates for adults.

FIGURE 5.1:
Self-Reported Obesity
by Age Category for
Kentucky and
the U.S., 2013
(ages 18+)

III. NEXT STEPS

FIGURE 5.2:
Chronic Disease
Prevalence for Kentucky
and the U.S., 2011-2012
(ages 18+)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the 2011 and 2012 BRFSS Survey Data. Estimates show the percentage of adults who report having one or more of the following chronic conditions: diabetes, cardiovascular disease, heart attack, stroke and asthma.

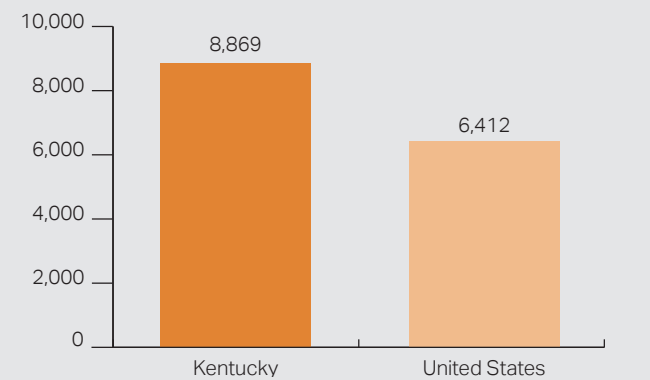
Chronic Diseases

Chronic diseases result in large cost and social burdens. The CDC estimates that chronic conditions are the cause of 7 of every 10 deaths in the U.S., and that the cost of treating these conditions consumes 86% of U.S. health expenditures each year.²⁹ In this study, we estimate the burden of chronic disease using BRFSS data; our estimates include the **percentage of adults reporting one or more of the following conditions: diabetes, cardiovascular disease, heart attack, stroke, and asthma.** Figure 5.2 shows that in 2012, more than 26% of adults in Kentucky reported having one or more of these conditions, compared to 21% of adults nationally. This difference is statistically significant.

With ACA implementation, increased access to health insurance coverage and preventative screening covered at 100% with no co-payment may actually result in a rise of diagnoses of chronic diseases. People who were previously never screened could be newly diagnosed after gaining new access to health coverage. The prevalence of disease is an important metric to track over time, along with other measures such as self-reported health status and premature death.

With ACA implementation, increased access to health insurance coverage and preventative screening covered at 100% with no co-payment may actually result in a rise of diagnoses of chronic diseases. People who were previously never screened could be newly diagnosed after gaining new access to health coverage. The prevalence of disease is an important metric to track over time, along with other measures such as self-reported health status and premature death.

FIGURE 5.3:
Years of Potential Life
Lost Due to Premature
Deaths for Kentucky
and the U.S., 2012
(ages 75 or younger)



Source: Web-based Injury Statistics Query and Reporting System (WISQARS) database, National Center for Injury Prevention and Control, and the CDC, which can be found here. Estimates report the YPLL before age 75, using the YPLL Age-Adjusted Rate and 2000 as the standard year.

Premature Death

The final metric presented in this baseline report is premature death (defined in this study as before age 75). This measure, sometimes called the **Years of Potential Life Lost (YPLL)**, is calculated from vital statistics data. The NCHS describes YPLL this way: "YPLL is a summary measure of premature mortality (early death). It represents the total number of years not lived by people who die before reaching a given age."³⁰ In other words, if life expectancy is 75 years, and a person dies at age 50, she loses 25 potential years. We total these potential years of life lost to arrive at this estimate of the burden of premature death.

In Kentucky, in 2012, there were a total of 8,869 YPLL due to premature death, compared to 6,412 YPLL lost on average

throughout the U.S. This indicates that Kentucky had more premature death than the U.S. average. Figure 5.3 shows the burden of premature death in Kentucky and the U.S. in 2012.

This semi-annual report provides a baseline assessment of the healthcare environment in Kentucky prior to ACA implementation. Across the domains of coverage, access, cost, quality, and health outcomes, many of Kentucky's indicators at baseline lagged behind national averages, though healthcare coverage fared better than the other areas. For other study domains, the indicators showed room for improvement in areas associated with healthcare affordability, access, and utilization (emergency department visits). These domains and metrics will be key focus areas as we assess the impact of the ACA implementation in Kentucky over the course of the study.

As the study proceeds, SHADAC will use semi-annual and annual reports to document progress in tracking and analyzing the data on ACA implementation. SHADAC will collaborate with the Foundation and the ACA Impact Study Oversight Committee on key next steps for the study, which include:

- Collecting and analyzing the data for the Study's first comparison year. This information will be presented in the annual report due to the Foundation for a Healthy Kentucky at the end of February 2016.
- Revising our access agreement with the University of Minnesota's Census Research Data Center to be able to include comparisons to groups of other states such as Kentucky's neighbors, southern states, and/or Medicaid expansion states for some of the Study indicators.
- Utilizing report findings to guide the development of Study materials, especially the Kentucky Health Reform Survey (K-HRS) and qualitative research planned for Study Year 2.

APPENDIX I: DATA SOURCES, METHODS, & INDICATORS

In this Appendix, we describe our data collection procedures and methods for estimating the Baseline indicators for the study. The Appendix is organized by data source, and it includes a brief data source description, a discussion on how the estimates were obtained, and some notes about specific indicators where relevant.

American Community Survey (2012)

The American Community Survey (ACS) is a federal survey conducted by the U.S. Census Bureau. The ACS asks about demographic and socioeconomic characteristics, and it includes a question on current health insurance coverage. Despite the availability of other sources to estimate health insurance coverage, we consider the ACS the best source for annual state-level estimates, particularly for states that have relatively low population sizes, like Kentucky. The reason is that it has a large sample size relative to other federal surveys (more than 3 million people nationally and more than 44,000 in Kentucky in 2012). This allows us to provide estimates by subpopulations at higher levels of precision than would be true using other federal surveys. An additional advantage is that we are able to use the ACS public use file to create custom variables that are specific to analyzing the impact of the ACA.

In this report, we use data from the ACS to estimate insurance coverage by type and to estimate the percent uninsured by five different characteristics. When reporting the distribution of insurance coverage, SHADAC uses a mutually exclusive variable based on the concept of primary coverage; a hierarchy is imposed to avoid double counting people with multiple sources of coverage. For adults, priority is given to Medicare coverage, followed by employer based insurance (or military coverage), Medicaid, and directly purchased coverage, respectively. For children, priority is assigned to ESI, followed by Medicaid/CHIP, individual coverage, and Medicare, respectively. For example, someone with coverage through their employer who also has directly purchased supplemental private coverage, would be considered as having employer coverage.

For analysis purposes, the definition of a family is important because eligibility for health insurance coverage is often based on family relationships and size. SHADAC suggests defining a family using the concept of a Health Insurance Unit (available [here](#)). This is particularly important for defining different income eligibility categories.

Current Population Survey (2013)

The Current Population Survey (CPS) is a federal survey conducted by the U.S. Census Bureau, sponsored jointly

with the U.S. Department of Labor/Bureau of Labor Statistics. The CPS Annual Social and Economic Supplement (ASEC), collected annually between the months of February and April, asks about health insurance coverage for the prior calendar year and is combined with information from the main CPS survey on determinants of health insurance coverage such as employer size, household spending, and other demographic and socioeconomic characteristics. The sample size is more than 200,000 people nationally, with approximately 2,600 in Kentucky in 2013. The CPS is available as a public use data file which allows for the creation of custom variables.

The CPS income and health insurance questions were recently redesigned to improve the quality of data reported. Consequently, estimates of income and health insurance from 2012 and before should not be compared with more recent estimates. This is why SHADAC only provides baseline estimates for 2013 for indicators calculated from the CPS. In fact, 2013 was a transition year for the set of income questions, as both the new and old questions were concurrently asked. A split file was released where the majority of data was derived using the old questions. The CPS may, however, re-release this file with a bridge between the old and new income questions. If they do, we will replace the current 2013 estimates with the new estimates prior to comparing them to 2014 data.

SHADAC used data from the CPS to estimate percent underinsured and median out-of-pocket spending. The definition for underinsurance used in this report is an individual living in a family that has spent over 10% of its total income on healthcare expenses.

Medical Expenditure Panel Survey – Insurance Component (2012)

The Medical Expenditure Panel Survey – Insurance Component (MEPS-IC) is a federal survey sponsored by the U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. The MEPS-IC collects information from public and private employers about the health insurance plans they offer to employees, including benefits, costs, and other characteristics. The sample size in 2013 was over 42,000 businesses at the national level, and over 700 in Kentucky. Summary reports with detailed state-level tables for private sector

employers are released in July of each year following the survey year. Unlike with the ACS and CPS, a public use data file is not available from the MEPS-IC.

For this report, SHADAC used data from the MEPS-IC to estimate employer offer rates and premiums. We accessed these estimates from the [MEPS-IC](#) web site.

National Health Interview Survey (2012)

The National Health Interview Survey (NHIS) is a federal survey sponsored by the Center for Disease Control & Prevention (CDC) and the National Center for Health Statistics (NCHS). The NHIS asks about health insurance coverage, health care utilization and access, health conditions and behaviors, and general health status, as well as many demographic and socioeconomic characteristics. It has a total sample of more than 108,000 in 2012 (the NHIS does not release state-level sample sizes). Summary reports, with state estimates for the 43 largest states of types of coverage (including Kentucky) are released six months after data collection. Data files with state-level and other geographic identifiers can be accessed only through a Census Research Data Center (RDC). Access to data in Research Data Centers is only allowed after a proposal has been submitted and approved by NCHS and only to researchers who have Special Sworn Status. SHADAC has an approved project for accessing this restricted data in the RDC for the purpose of posting estimates on our [Data Center](#). Changing variable definitions or adding variables means amending our annual proposal to the RDC. SHADAC used data from the NHIS to estimate nine different measures in the cost and access domains. Measures within the cost domain include **trouble paying medical bills, delayed needed care due to cost, and went without needed care due to cost**. For the access domain, the measures include: **usual source of care, provider visit in the last year, emergency department visit in the last year, found doctor when needed, told provider accepts insurance, and changes to medical drug use due to cost**. Our plan is to add an additional measure **wait time to see a primary care provider** but this is contingent on our receiving approval to our new proposal to the restricted Research Data Center.

The **changes to drugs due to cost** measure includes asking the doctor for cheaper medications, delaying refills, taking less medication than prescribed, skipping doses, using alternative therapies, or buying medications out of the country within the past year. The **trouble paying off medical bills** measure includes people who are paying off medical bills within the past year.

Behavioral Risk Factor Surveillance System (2011, 2012, 2013)

The Behavioral Risk Factor Surveillance System (BRFSS) Survey is a state-based survey sponsored by the CDC and the Kentucky Cabinet for Health and Family Services. The BRFSS Survey asks about health conditions, risk behaviors, preventive health practices, access to health care, and health insurance coverage. State-level results are available from the CDC for all states. Kentucky BRFSS data are analyzed at the Area Development District (ADD) level for the state's 15 ADDs. The sample size for each ADD is 500 completed surveys, to ensure an adequate sample size for analysis.

SHADAC obtained these measures from different sources. The **adult obesity, adult health status and prevalence of chronic diseases** measures in the health outcomes domain were created by SHADAC by pooling 2011 and 2012 estimates from the public use file to improve the precision of the estimates. These estimates are also available from the [Robert Wood Johnson Foundation \(RWJF\) DataHub](#). Statistical tests are performed for these measures. Another source for the BRFSS data was the CDC online tool [BRFSS Prevalence & Trends Data](#). The three preventive care utilization measures that are part of the quality domain: **cholesterol awareness, colorectal cancer screenings and percentage of adults who have had a tetanus shot** were obtained from this source. These estimates were single year estimates from 2012 and 2013. No information was available on standard errors, so no statistical tests were performed for these measures. We also include a measure (**no dental visit in the last year**) that is sourced from the Kentucky Department for Public Health Annual Report.

The preventive care utilization measures report the following: the percentage of adults who have had their blood cholesterol checked within the last 5 years, the percentage of adults aged 50 or more who have ever had a sigmoidoscopy or colonoscopy, and the percentage of adults who have had a tetanus shot (either a Tdap or not) since 2005. The **prevalence of chronic diseases** measure shows the percentage of adults who report having one or more of the following chronic conditions: diabetes, cardiovascular disease, heart attack, stroke and asthma.

National Survey on Drug Use and Health (2011 and 2012)

The National Survey on Drug Use and Health (NSDUH) is sponsored by the U.S. Department of Health and Human Services' Substance Abuse and Mental Health Services

Administration. The NSDUH collects information on the prevalence of tobacco, alcohol, and drug use, as well as mental health and treatment-related indicators among Americans ages 12 years and older.

The Substance Abuse and Mental Health Services administration creates the estimates by pooling two years of data. The estimates in this report are from the time period 2011/2012. No standard errors were available from this source so no statistical tests were performed. The four measures included here under the access domain are: **serious mental illness, any mental illness, needed but did not receive illicit drug abuse treatment and needed but did not receive alcohol abuse treatment.** Estimates on the prevalence of mental illness are based on people aged 18 or older. Estimates on treatment of substance abuse provide information for people aged 12 or older.

Youth Risk Behavior Surveillance System (2013)

The Youth Risk Behavior Surveillance System (YRBSS) Survey asks students in grades 9-12 about tobacco use, sexual behaviors, alcohol and drug use, diet and exercise, obesity, asthma, and behaviors related to violence and injury. Kentucky also administers a middle-school version for grades 6-8. The YRBSS Survey is given to a sample of students, and is conducted in odd-numbered years, with results released the year following the survey. In Kentucky's 2013 YBRSS, more than 1,600 high school and more than 1,200 middle school students were included in the sample. The source for the indicators obtained from this source is [online data from the CDC](#).

We include the following two different measures from the Survey: **unprotected sex among high school students and obesity rates for high school students.** The estimate on unprotected sex reports the percentage of sexually active high school students who did not use any method to prevent pregnancy during their last sexual intercourse. The obesity measure reports the percentage of students who were above the 95th percentile for Body Mass Index based on gender and age specific reference data from the 2000 CDC growth charts.

The standard errors for estimates of unprotected sex among high school students were not reported, instead the confidence intervals at 95% level were available. We used this information to obtain an approximation of the standard errors that allowed us to perform statistical testing of the differences between estimates for Kentucky and the U.S.

Breastfeeding Report Card (2012)

The Breastfeeding Report Card, developed by the CDC's Division of Nutrition, Physical Activity, and Obesity, assembles state-specific data from the National Immunization Survey (NIS) on breastfeeding practices for children ages 19-35 months. The 2014 report card is based on 2012-13 landline telephone sample of approximately 30,000 children from the NIS of 2011 births. Outcome indicators include: ever breastfed, breast feeding at 6 and 12 months, and exclusive breast feeding at 3 and 6 months (although these last two were not considered for the baseline). The report does not provide information on standard errors and statistical testing of the differences between estimates for Kentucky and the U.S. was not performed.

Healthcare Cost and Utilization Project (2011)

The Healthcare Cost and Utilization Project (HCUP) provides data on health statistics and information on hospital inpatient and emergency department utilization through its portal: [HCUPnet](#). Using this tool, we obtained information about the U.S. hospital readmission rate in 2011. However, the tool does not provide state-level information for this indicator and no comparable estimates were found for Kentucky.

Prevention Quality Indicators (2011)

The Kentucky Cabinet for Health and Family Services provides [information](#) on the Prevention Quality Indicators (PQIs), a set of measures that identify conditions that are treated in a hospital inpatient setting, but are ambulatory care sensitive, and may be treatable in an outpatient setting. PQIs are taken from hospital administrative data, are provided at the population level, and serve as a screening tool to detect gaps in the current health services in a community. We do not provide statistical testing because these indicators are not based on estimates produced from samples of a population.

We include PQIs 1, 7, and 15 in the baseline: diabetes short-term admissions, hypertension admissions, and asthma admissions (among young adults).

MONAHRQ

MONAHRQ is an open source software tool provided by the Agency for Healthcare Research and Quality (AHRQ) that includes pre-loaded reporting templates using AHRQ Quality Indicators, CMS Hospital Compare ratings, and

Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient experience ratings. Organizations can input their own data to generate reporting websites accessible to the public or policymakers. Kentucky is one of 15 states that have created MONAHRQ websites using the software. Kentucky MONAHRQ is sponsored by the Cabinet for Health and Family Services/Office of Health Policy and includes annual [data](#) for years 2009-2012. Kentucky's site includes indicators on hospital quality and utilization as well as avoidable stays and we use it to obtain the estimate on death rate in low mortality DRGs. This estimate reports dying in the hospital while getting care for a condition that rarely results in death.

These data come from administrative reports submitted by hospitals across the nation and state. Users can view reports by hospital, ZIP code, region, or health topic. Because this is not a survey, there is no sampling or sample size, so we did not test for statistically significant differences.

Web-based Injury Statistics Query and Reporting System

[The Web-based Injury Statistics Query and Reporting System \(WISQARS™\)](#) is the CDC's public-use database of information on injury, violent death, and cost of injury in the United States. The database pulls in data from the National Vital Statistics System, the National Electronic Injury Surveillance System, the Census Bureau, and other sources. Users can create custom reports, charts, and maps using the built-in tools on the site, and breakouts are available by state, gender, race, and age. The tool does not provide information on standard errors and statistical testing of the differences between estimates for Kentucky and the U.S. was not possible.

We use WISQARS to obtain information on premature deaths, which is an indicator that reports the years of potential life lost (YPLL) before age 75, using the YPLL Age-Adjusted Rate and 2000 as the standard year.

National Vital Statistics Reports

[The National Vital Statistics Report](#), disseminated by the CDC, contains data on low birth weight births, by race and Hispanic origin of the mother in each U.S. state. Low birth weight is categorized as weighing less than 2,500 grams (5 lb. 8 oz.). Because this is not a survey (the system records all known occurrences of low birth weight, and reports are released annually), there is no sampling or sample size and no need for statistical testing of differences.

Medicaid Expansion Report (2013)

Deloitte published a [report](#) for the Commonwealth of Kentucky on the progress of the Medicaid Expansion after its first 12 months. In this report, we found an estimate of uncompensated care in 2013 for Kentucky, which only includes data for the first three quarters of 2013. A comparable estimate is not available for the national level for reference. As this estimate was produced by a private firm contracted to monitor the first year of Medicaid Expansion, we do not necessarily expect the same source or methodology to be used in future estimates.

Baseline Estimate Considerations

Suppression rules depended on the source of the data and the availability of measures of uncertainty and or sample sizes. In the ACS and CPS where we used public use files, we suppressed data when the relative standard error was greater than 30%. Estimates from the NHIS are suppressed if either the number of sample cases was too small or the relative standard error was greater than 30%. In cases where standard errors were not available, we did not suppress any estimates. Lastly, we did not include some trend estimates due to recent changes in the questions of some federal surveys that made it difficult to compare data points over time (e.g., the CPS).

It should be noted that we lacked the necessary information to perform an "overlap adjustment" to our statistical tests. Since we are comparing Kentucky's estimates to national estimates (which include Kentuckians), the proportion of Kentuckians in the population considered in the estimate should be taken into account. However, this specific information was not available for most estimates. By not conducting an overlap adjustment we are slightly less likely to report that a difference is statistically significant.

STUDY INDICATORS

KENTUCKY ACA IMPACT MEASURES AND DATA SOURCES

Indicator	Data Source	Sub-Populations Available					Final Update	
		Race/ Ethnicity	Age and Gender	Income/ SES	Coverage	Urban / Rural	2015	2016
Indicators Related to Coverage								
Insurance coverage by type ¹	American Community Survey (ACS)	✓	✓	✓	✓	✓	✓	✓
Uninsured rates	ACS	✓	✓	✓	✓	✓	✓	✓
Employer offer rates	Medical Expenditure Panel Survey (MEPS-IC)						✓	✓
Under-insured rates ²	Current Population Survey (CPS)	✓	✓	✓	✓	✓	✓	
Indicators Related to Access								
Usual source of care	National Health Interview Survey (NHIS)		✓		✓		✓	✓
Changes to medical drug use due to cost	NHIS		✓		✓		✓	✓
Provider visit in the last year	NHIS		✓		✓		✓	✓
Emergency department visit in the last year	NHIS		✓		✓		✓	✓
Found doctor when needed	NHIS		✓		✓		✓	✓
Told provider accepts insurance	NHIS		✓				✓	✓
Wait time to see primary care physician ³	NHIS (pending)							
Serious mental illness	National Survey on Drug Use and Health (NSDUH) ⁴		✓				✓	
Any mental illness	NSDUH		✓				✓	
Needed, but did not receive illicit drug abuse treatment (12+)	NSDUH		✓				✓	
Needed, but did not receive alcohol abuse treatment (12+)	NSDUH		✓				✓	
No dental visit in past year	BRFSS Data	✓	✓				✓	
Indicators Related to Cost								
Trouble paying medical bills	NHIS		✓		✓		✓	✓
Delayed needed care due to cost	NHIS						✓	✓

Indicator	Data Source	Sub-Populations Available					Final Update	
		Race/ Ethnicity	Age and Gender	Income/ SES	Coverage	Urban / Rural	2015	2016
Indicators Related to Cost								
Went without needed care due to cost	NHIS						✓	✓
Hospital uncompensated care	KHA (as cited in Deloitte's 2014 Commonwealth of Kentucky Medicaid Expansion Report)						TBD	TBD
Premiums (private sector employers)	MEPS-IC						✓	✓
Median out-of-pocket spending	CPS	✓	✓	✓	✓	✓	✓	
Indicators Related to Quality								
Readmission rates	HCUPNet							
Diabetes short-term admissions	Kentucky Cabinet for Health and Family Services Prevention Quality Indicators	✓	✓			✓	✓	
Hypertension admissions	Kentucky Cabinet for Health and Family Services Prevention Quality Indicators	✓	✓			✓	✓	
Asthma admissions (children, young adults)	Kentucky Cabinet for Health and Family Services Prevention Quality Indicators	✓	✓			✓	✓	
Death rate in low mortality DRGs	KY MONAHRQ						✓	
Low birth weights	National Vital Statistics Reports	✓		✓		✓	✓	
Preventive care utilization ⁵	Behavioral Risk Factor Surveillance System (BRFSS)	✓	✓				✓	
Unprotected sex among high school students	YRBSS Survey Data						✓	
Breastfeeding rates	U.S. National Immunization Survey (as cited in the 2014 "Breastfeeding Report Card")						✓	✓
Indicators Related to Outcomes								
Obesity	BRFSS	✓	✓				✓	
Poor/Fair health	BRFSS	✓	✓				✓	
Chronic disease prevalence	BRFSS	✓	✓				✓	
Premature death	CDC WISQARS	✓					✓	

¹Includes percent with employer sponsored insurance, so we removed that indicator from cost section. ²Share of the population spending 10% or more on premiums and other out-of-pocket costs (co-pays, etc.). Requires merging two years of data to produce estimates for sub-populations. ³Producing these estimates require analyzing data in a restricted Research Data Center. ⁴National Survey on Drug Use and Health (NSDUH). Regular reports and online query tools available from SAMSHA. ⁵Select utilization rates from the list of essential health benefits can be produced for Kentucky using the BRFSS Data. Producing these estimates by race/ethnicity and other breakdowns may require combining two years of data.

IV. END NOTES

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