

FINAL REPORT

STUDY OF THE IMPACT OF THE ACA IMPLEMENTATION IN KENTUCKY

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February 2017



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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 our ***Study of the Impact of the Implementation of the Affordable Care Act (ACA) in Kentucky***, funded by the Foundation for a Healthy Kentucky (Foundation). The study evaluates Kentucky's performance in five domains: coverage, access, cost, quality, and health outcomes.

This is the Final Report for the study and provides a comprehensive presentation of study findings, including both new study findings based on analysis of recently available data and a review of key findings from prior reports. The study's initial duration was planned to last 34-months (March 2015 through January 2018); however, the duration of the study has been shortened to conclude in February 2017. Due to this, the study did not include previously planned qualitative components — focus groups with Medicaid beneficiaries and interviews with key stakeholders in Kentucky.

As part of this project, SHADAC has used semi-annual and annual reports to document the impact of the ACA in Kentucky using a set of indicators selected in consultation with the Foundation and its ACA Impact Study Oversight Committee. These reports have tracked changes in the indicators through the duration of the study, and in certain cases they include comparisons of Kentucky metrics with the U.S. and other states. This report includes data obtained from analysis of a variety of federal and state data resources, including both survey and administrative data.

A new section of this report presents an analysis of Medicaid administrative data previously reported in study quarterly snapshots. This section examines trends in enrollment of non-elderly adults in Kentucky's traditional Medicaid program and ACA Medicaid expansion from 2014-2016. This report also presents new findings from the Kentucky Health Reform Survey (K-HRS), which was conducted in spring 2016 by SHADAC and the University of Cincinnati's Institute for Policy Research.

Purpose and Layout of Current Report

The main purpose of this report is to provide an overview of study findings through: 1) updates on our analysis of key study indicators in Kentucky, 2) a new analysis of trends in Medicaid enrollment and services in Kentucky from 2014-2016, 3) additional findings from our 2016 survey, with a trend comparison of pre-ACA estimates from the Kentucky Health Issues Poll versus post-ACA estimates from the K-HRS, and 4) a conclusion section that discusses overall findings on the impact of implementation of the ACA in Kentucky from this and other reports.

1) Data Update

This section provides a data update to the key indicators that were introduced in the study's baseline report and revisited in further annual and semi-annual reports. With the exception of certain indicators that were discontinued because updated data were unavailable after the baseline report, this section presents on all indicators observed throughout the study, as well as a few indicators that were added later in the study. Many of the indicators in this report have been updated with new data since the most-recent semi-annual report; however, we also present data that haven't been updated, to provide a comprehensive review of our study findings. These data include indicators from all five study domains (coverage, access, cost, quality, and health outcomes). All of the updated data in this section include the time period since implementation of the ACA; some of the updates were available for 2015, while others were only available for 2014 at this time. As a baseline comparison, we use calendar year 2012 data for most indicators because it pre-dated the first ACA enrollment period; however, for certain indicators in which 2012 data were not available, we use 2013 as a baseline. For selected indicators, we also compare Kentucky to U.S. estimates and neighboring states for comparison (Arkansas, Indiana, Illinois, Ohio, Missouri, Tennessee, Virginia and West Virginia).¹

2) Kentucky Medicaid Enrollment and Services

The next section of the report presents an analysis of Medicaid enrollment and service utilization for non-elderly adults, using administrative data provided by the Kentucky Cabinet for Health and Family Services. The analysis examines quarterly trends since the Commonwealth expanded its Medicaid program in January 2014 through the third quarter of 2016 (July-Sept.), which are the most recently available data. The indicators assessed in this section include enrollment in traditional and ACA-expansion Medicaid, and several services covered by Medicaid, including hepatitis C screenings, newborn births, dental services, breast and colorectal cancer screenings, substance use treatment services, and diabetes screenings.

3) Kentucky Health Reform Survey (K-HRS) Trend Analysis

The following section presents findings from a new analysis of the K-HRS, which compares pre-ACA estimates from the Kentucky Health Issues Poll (KHIP) against our study's K-HRS, which was conducted in 2016. The K-HRS was designed in consultation with the Foundation and the study's Oversight Committee to address key study questions about the impacts of ACA implementation in Kentucky. Additionally, the K-HRS was based on the methodology of the existing KHIP, allowing us to compare estimates across the two surveys. This analysis focuses on areas in which we designed the K-HRS to match the KHIP, to support a pre- and post-ACA comparison: uninsurance and coverage type, usual source of care and type of care facility, dental coverage and time since last dental visit, and self-reported health status.

4) Study Conclusions

The final section of this report includes a discussion of the conclusions of our study on the impacts of ACA implementation in Kentucky. We will revisit the key findings from this and other study reports—including prior semi-annual and annual reports; quarterly snapshots; and special reports on kids' coverage, high-deductible health insurance, and substance use—to present final study conclusions on changes to coverage, access, cost, quality and health outcomes in Kentucky since implementation of the ACA.

II. STUDY FINDINGS: DATA UPDATE

DOMAIN #1: HEALTH INSURANCE COVERAGE

Health insurance coverage is a critical component of access to health care services. Having health insurance is associated with increased access to needed medical care, better health care outcomes and improved health status.² In this study, the metrics used to monitor health insurance coverage within Kentucky over time include the distribution of health insurance coverage by type (public, private and uninsured); rates of underinsurance; and the percentage of employers that offer health insurance coverage. Our data sources in this domain include federal surveys that provide state-level estimates of health insurance coverage including the American Community Survey (ACS), the Medical Expenditure Panel Survey-Insurance Component (MEPS-IC) and the Current Population Survey (CPS).

Overall, health insurance coverage rates in Kentucky have improved substantially since 2012. The Commonwealth's uninsurance rate has been cut by more than half, from 13.6% to 6.1% in

2015. During this same time, Kentucky has seen stable rates of employer-sponsored insurance and increases in coverage through Medicare, Medicaid/CHIP and the individual-market coverage. Despite these improvements, however, some groups continue to experience higher rates of uninsurance. For example, the uninsurance rate for Kentucky's Hispanic/Latino population is nearly quadruple the state's overall uninsurance rate, the rate for young adults (ages 19-25) is almost double the overall rate and the rate for the low-income population is more than one and a half times the overall uninsurance rate.

Since 2012, Kentucky's
uninsurance rate has
dropped by more than half.

COVERAGE MEASURES

Uninsurance Declined, Medicaid/CHIP and Individual-market Increased Significantly

Figure 1.1 presents the *distribution of the population by type of health insurance coverage* (employer, individual, Medicaid/CHIP, Medicare and uninsured), for 2012 and 2015. In Figure 1.1 (and in all figures in this report), statistically significant differences are marked with asterisks.

Since 2012, Kentucky's uninsurance rate declined a statistically significant 7.5 percentage points, from 13.6% to 6.1% in 2015. Employer-sponsored insurance (ESI) remains the largest source of coverage in Kentucky (50.0%), which has remained statistically unchanged since 2012. This stability in Kentucky's ESI coverage rate represents departure from the long-term trend of declining ESI coverage in Kentucky and nationally.³

The remaining three types of insurance coverage—Medicare, Medicaid/Children's Health Insurance Program (CHIP), and individual-market coverage—each increased significantly from 2012 to 2015. During this time, Medicare coverage in Kentucky increased 1.5 percentage points to 18.9% in 2015, which is consistent with the aging of Kentucky's population.⁴

Since 2012, Medicaid/CHIP coverage increased 6.4 percentage points to 19.8%, which likely reflects the Commonwealth's implementation of the ACA's Medicaid expansion. As discussed later in this report, since Kentucky expanded its Medicaid program in 2014, it has experienced increased enrollment in traditional Medicaid and enrollment by non-elderly adults in the Medicaid expansion grew to more than 500,000 people by the third quarter of 2016. Kentucky also has experienced a smaller, but still statistically significant, increase of 0.9 percentage points in individual-market coverage, from 4.4% in 2012 to 5.3% in 2015. This also is consistent with ACA provisions to support individual-market coverage, such as the creation of marketplaces (e.g., kynect) where individuals could shop for and purchase health insurance coverage, and financial assistance (i.e., advanced premium tax credits) to make health insurance more affordable for people with moderate incomes (139-400% of Federal Poverty Guidelines).

We also examine Kentucky's uninsurance rate compared to the U.S. rate and to that of nearby states. Figure 1.2 shows uninsurance rates for Kentucky's bordering states, plus Arkansas, and the U.S. rate.⁵

DOMAIN #1: HEALTH INSURANCE COVERAGE

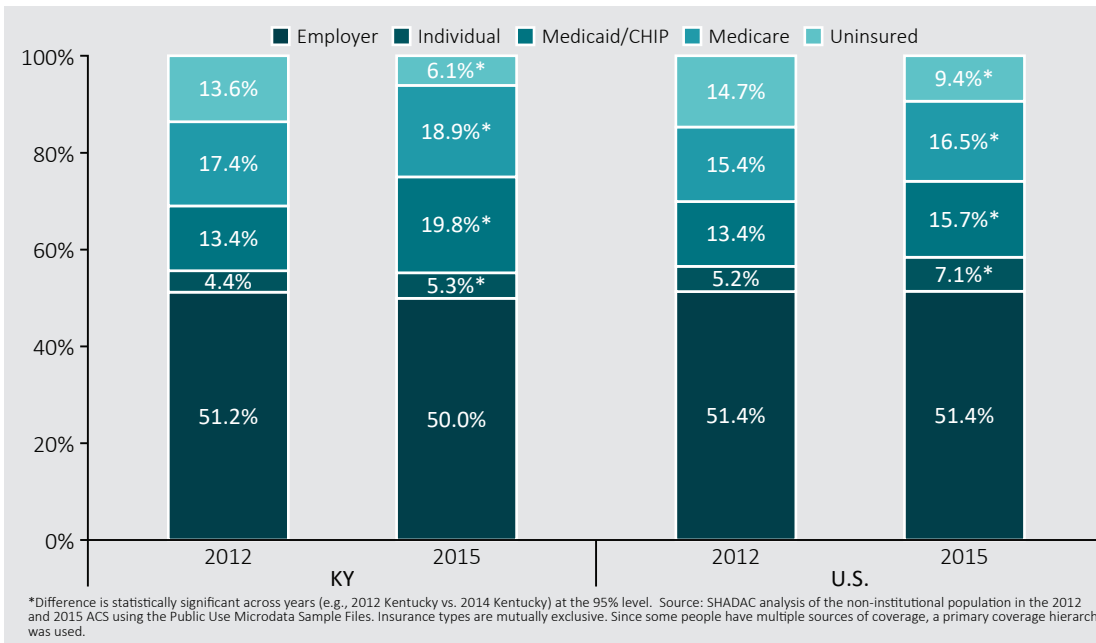


FIGURE 1.1:
Insurance Coverage by Type for Kentucky and the U.S., 2012 & 2015 (all ages)

Overall, Kentucky’s uninsurance rate is significantly lower than the U.S. and neighboring states, with the exceptions of Ohio and West Virginia. Although it should be interpreted with caution due to the small number of states, the uninsurance rates of our group of comparison states suggest a pattern related to whether and how they implemented Medicaid expansions. The four states that implemented “traditional” Medicaid expansions as intended by the ACA (KY, IL,

OH, WV) have lower uninsurance rates (7.0% or lower), while the three states that haven’t expanded their Medicaid programs (MO, TN, VA) have higher uninsurance rates (9.1% or higher). Additionally, the two states (AR, IN) that expanded their Medicaid programs through an “alternative” approach, based on a Section 1115 waiver, have uninsurance rates similar to the non-expansion states (9.4% and 9.8%, respectively).

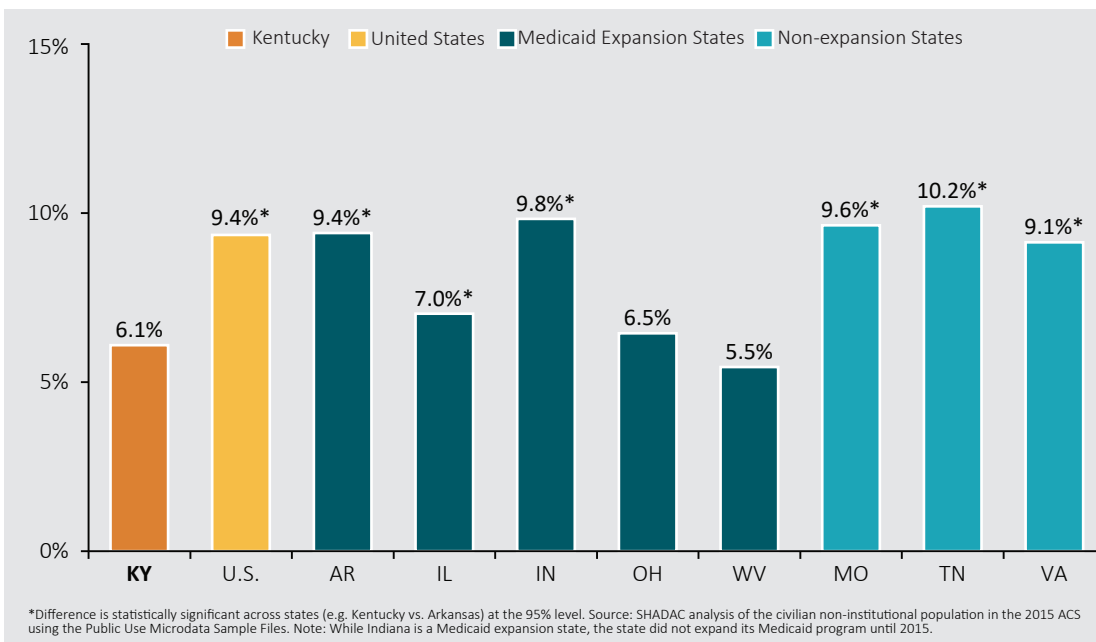
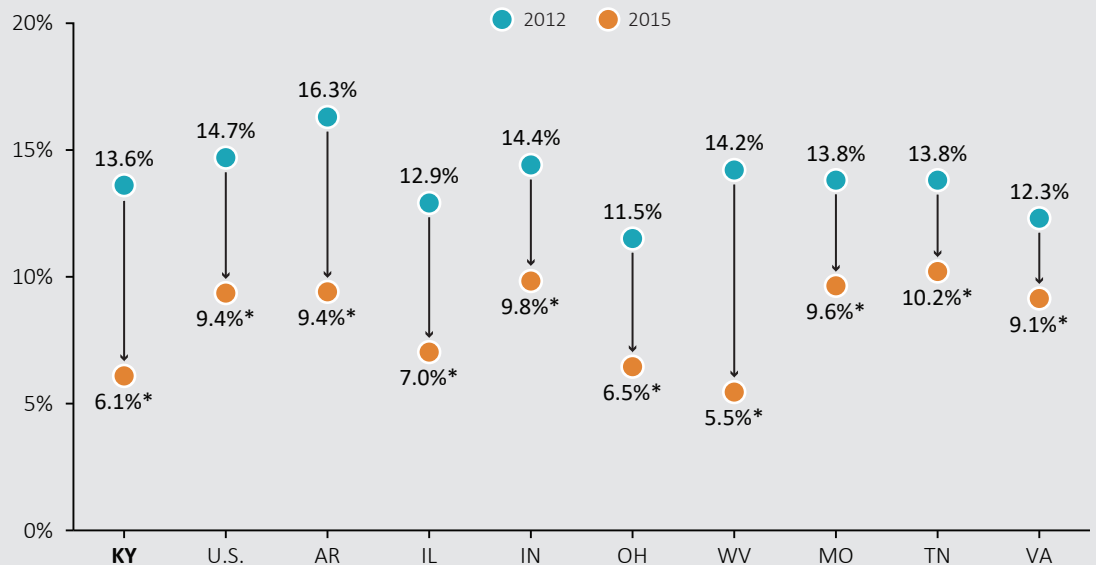


FIGURE 1.2:
Uninsurance, Kentucky Compared to Neighboring States and U.S. Rate, 2015 (all ages)

Figure 1.3 shows both 2012 and 2015 uninsurance rates for Kentucky, the U.S. and comparison states. While the U.S. and all states experienced declines in their uninsurance rates, the size of those drops

varied. Since 2012, Kentucky had the second-largest decline in its uninsurance rate (7.5 percentage points), after only West Virginia (8.8 percentage points).

FIGURE 1.3:
Uninsurance,
Kentucky Compared to
Neighboring States and
U.S. Rate, 2012 & 2015
(all ages)



*Difference is statistically significant within the state (e.g. Arkansas 2012 estimate vs. Arkansas 2015 estimate) at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 ACS using the Public Use Microdata Sample Files.

The following four figures present *uninsured rates by race/ethnicity, age, income category and gender* for Kentucky.

Uninsurance Dropped Among Whites, African Americans

Of the five race and ethnicity categories we examined, three experienced statistically significant declines in uninsurance between 2012-2015, while two did not experience significant changes (see Figure 1.4). Since 2012, uninsurance rates dropped a statistically significant 11.8 percentage points among African Americans, to 5.5% in 2015; 7.4 percentage points among people of other or multiple races, to 8.2%; and 7.3 percentage points among whites, to 5.3%. The 24.2% uninsurance rate for the Hispanic/Latino population was statistically unchanged since 2012, as was the 12.5% uninsurance rate among Asians.

Uninsurance Declined Significantly Among All Ages

Among the Commonwealth’s non-elderly population, all age groups experienced statistically significant declines in uninsurance. From 2012-2015, the sizes of these declines varied from a decline of 1.9 percentage points for children (ages 0-18) to 12.6 percentage points for adults ages 26-44 (see Figure 1.5).

Additionally, uninsurance rates continue to differ by age in 2015. Despite a relatively large decline of 15.3 percentage points, young adults (ages 19-25) continued to have the highest uninsurance rate (11.2%), while children continued to have the lowest rate (4.5%), also tied with adults ages 55-64.

Since 2012, Kentucky had the second-largest decline in its uninsurance rate (7.5 percentage points), after only West Virginia (8.8 percentage points).

DOMAIN #1: HEALTH INSURANCE COVERAGE

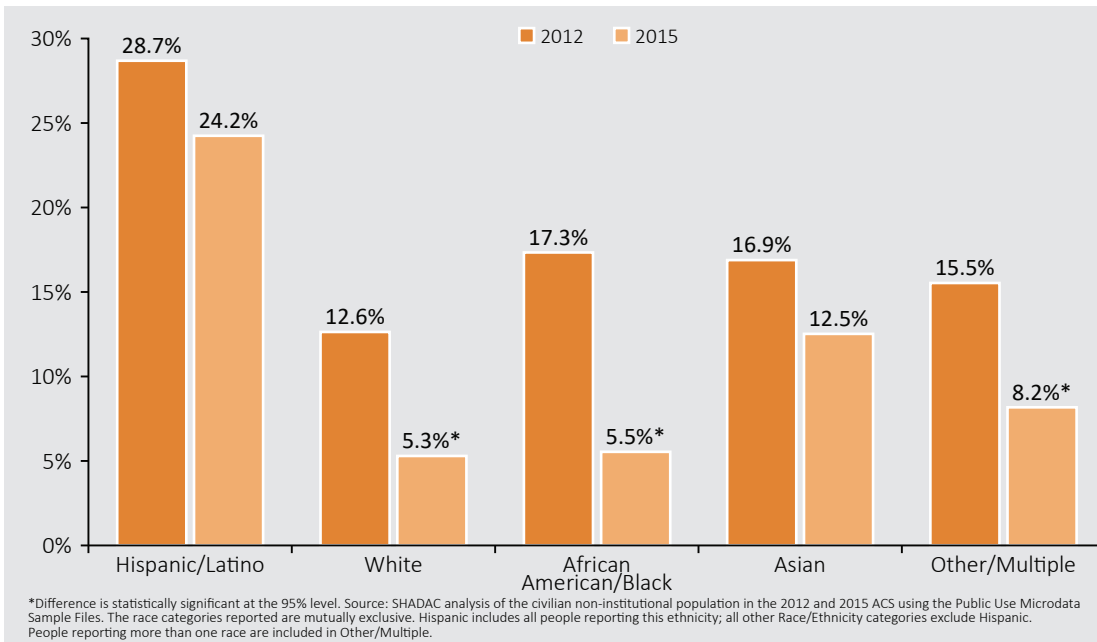


FIGURE 1.4:
Uninsured Rates by Race/Ethnicity for Kentucky, 2012-2015 (all ages)

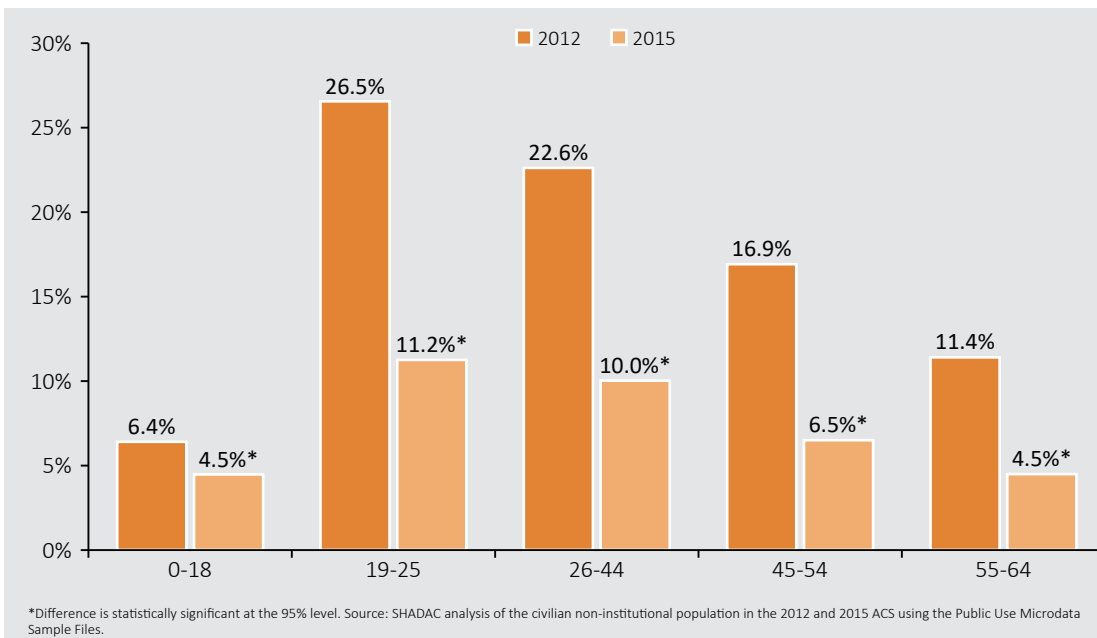


FIGURE 1.5:
Uninsured Rates by Age Category for Kentucky, 2012-2015 (ages 0-64)

All Income Categories Saw Declines In Uninsurance

Figure 1.6 presents uninsured rates by income category. We use the Federal Poverty Guidelines (FPG) and ACA income eligibility levels for our income categories (see End Notes for 2015 FPG levels in dollars).^{6,7} Figure 1.6 shows the relationship between income and uninsurance: as incomes rise, uninsurance rates decline. People with incomes below 138% of FPG had the highest uninsurance rates (9.4% in 2015). However, this group also had the largest declines in uninsurance from 2012-2015, experiencing a significant drop

of 15.5 percentage points. This decline in uninsurance is likely due to the Commonwealth’s Medicaid expansion, which expanded eligibility to adults with incomes up to 138% of FPG.

People with incomes between 139-400% of FPG also experienced significant declines in uninsurance between 2012-2015. Those with incomes from 139-200% of FPG—a group eligible for financial assistance to reduce the cost of premiums and cost-sharing subsidies to reduce out-of-pocket costs, such as deductibles—experienced a 9.2 percentage point decline in uninsurance, to 8.3% in 2015.

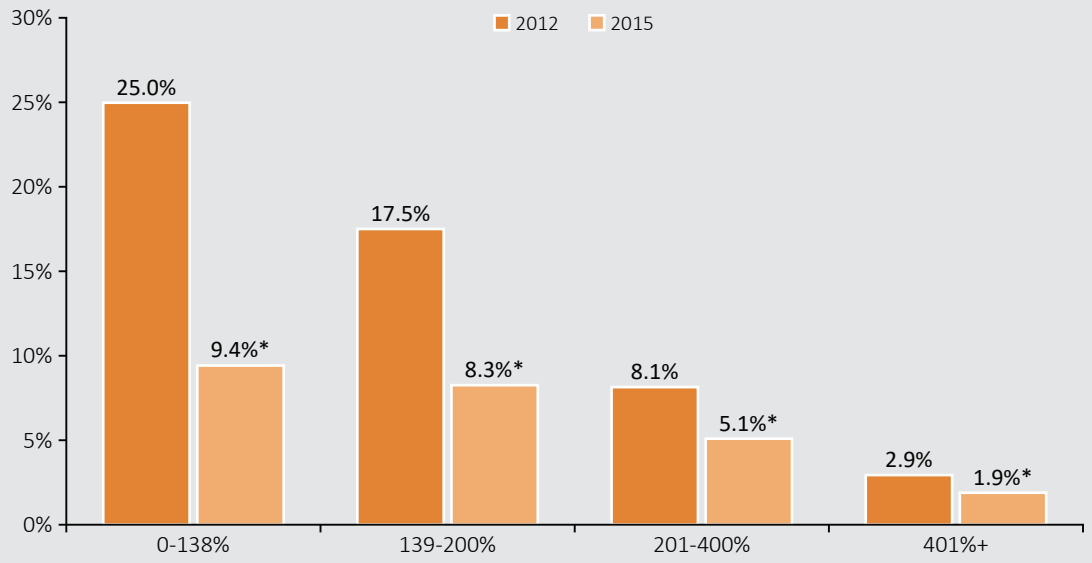
People with incomes from 201-400% of FPG—a group eligible for financial assistance to reduce premium costs but not eligible for cost-sharing subsidies—experienced a smaller decline of 3.0 percentage points, to 5.1% in 2015.

Additionally, Kentuckians with incomes of 401% of FPG or higher also saw a relatively small but statistically significant decline in uninsurance of 1.1 percentage points, to 1.9% in 2015 (from about 32,000 to 21,000). While this income group was not eligible for Medicaid expansion or financial assistance for purchasing private health insurance, other ACA provisions may have

contributed to this decline, as well. For example, although they are not eligible for financial assistance, higher income Kentuckians may still purchase coverage through the state health insurance marketplace (formerly called “kynect”).

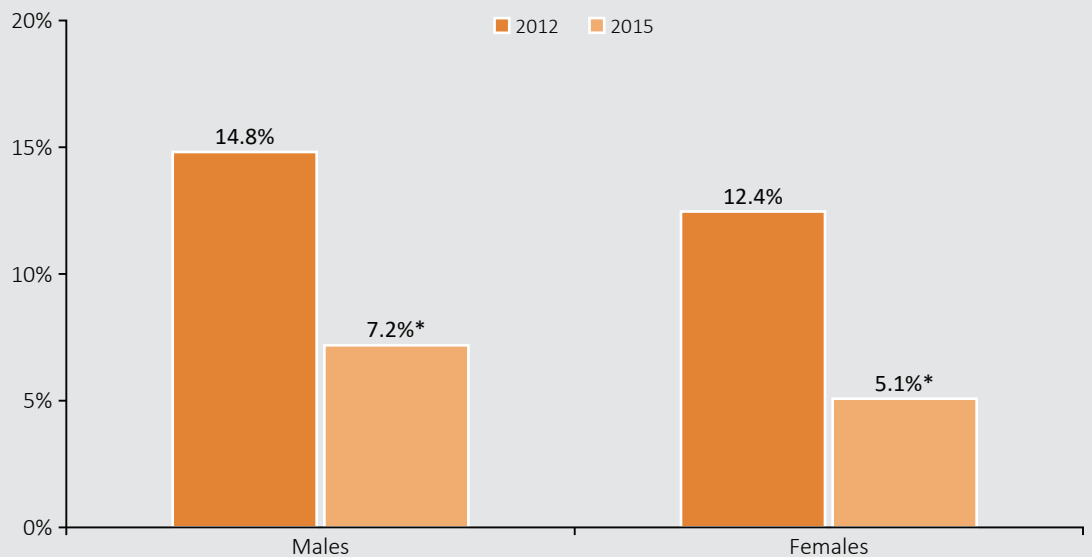
Additionally, the ACA’s shared responsibility provision, also known as the “individual mandate,” requires individuals to maintain health insurance coverage or pay a tax penalty, which may have prompted some higher income Kentuckians to obtain health insurance. Figure 1.7 presents uninsured rates by gender.

FIGURE 1.6:
Uninsured Rates by
Income as Percent
of Federal Poverty
Guidelines for Kentucky,
2012-2015 (all ages)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 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.

FIGURE 1.7:
Uninsured Rates by
Gender for Kentucky,
2012-2015 (all ages)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 ACS using the Public Use Microdata Sample Files.

DOMAIN #1: HEALTH INSURANCE COVERAGE

Prior to implementation of the ACA in Kentucky, males had higher rates of uninsurance than females. Since then, both groups have experienced similar declines in uninsurance (7.6 percentage points among males and 7.4 points among females), with males continuing to have a higher uninsurance rate in 2015 (7.2% versus 5.1%).

Drop In Employers Offering Coverage Driven By Small Firms

In the U.S., employer-sponsored insurance (ESI) is the largest source of coverage for individuals. This is true in Kentucky as well, where 50.0% of the population has employer-sponsored insurance (see Figure 1.1). Because of this, whether employers offer health insurance to their workers is an important factor in the coverage landscape. Looking at *employer offer rates*, there has been a statistically significant decline of 6.6

percentage points in the percentage of employers that offer health insurance between 2012-2015. However, the availability of ESI differs based on the size of employers. Since 2012, there was no significant change in the percentage of large employers (50 or more workers) offering health insurance, at 98.3% in 2015 (see Figure 1.8).

In contrast, the percentage of small employers (less than 50 workers) offering coverage declined 9.8 percentage points, from 36.4% in 2012 to 26.6% in 2015. Despite the decline in the percentage of employers offering health insurance, it is important to note that Kentucky has not experienced a significant decline in the *percentage of individuals with coverage through an employer*. This is likely because large employers—which employ more Kentuckians than small employers—have continued to offer health insurance at rates similar to before the ACA.

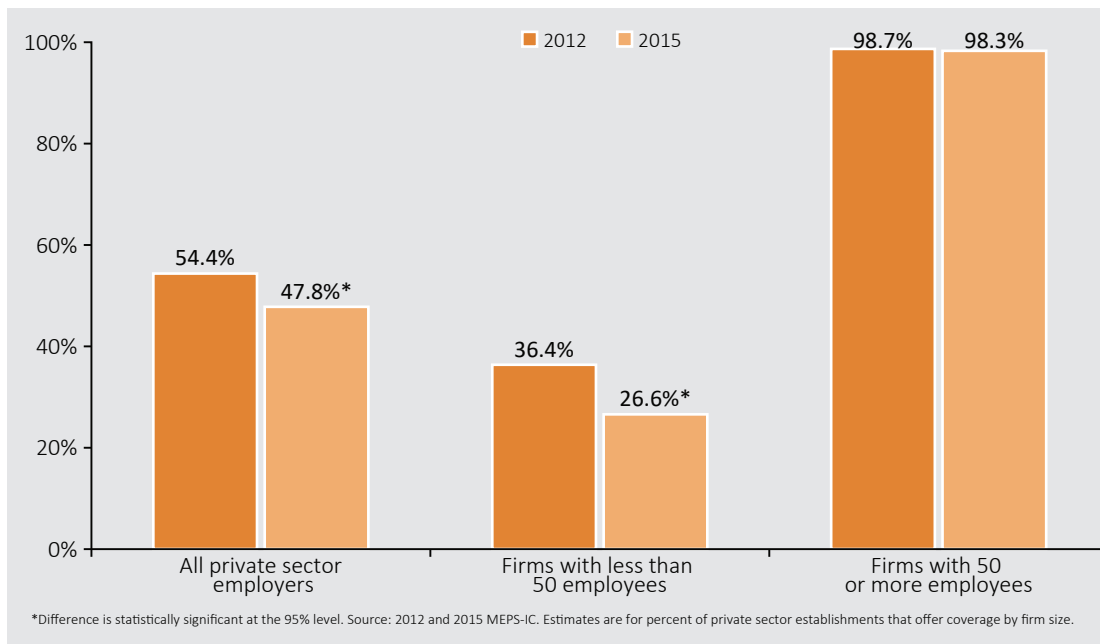


FIGURE 1.8:

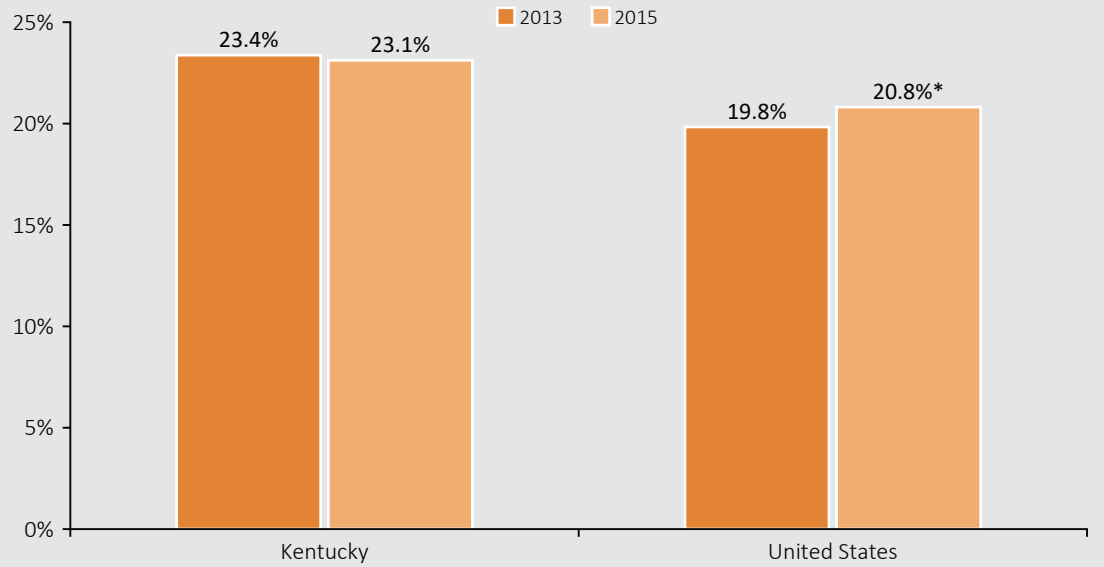
Employer Offer Rates by Private Sector Employers for Kentucky, 2012-2015

Nearly 1 in 4 Kentuckians Remained Underinsured

Underinsurance is a measure of the affordability of health insurance and its effectiveness at insulating people from high out-of-pocket costs if they need health care. While there are various ways to define underinsurance, for this study we consider families spending 10% or more of annual household income on health care (premiums, deductibles, and out-of-pocket expenses) during any given year to be underinsured.^{9,10,11,12}

SHADAC analysis of data from the CPS found that 23.1% of Kentuckians were underinsured in 2015, which was not significantly different from 2013 (see Figure 1.9).¹³ Although these data do not support the concern raised by some policymakers that health insurance and health care have become less affordable since implementation of the ACA, they do suggest that many Kentuckians continue to face high health-related costs relative to their incomes.

FIGURE 1.9:
Underinsured Rate,
Kentucky and the U.S.,
2013-2015 (all ages)



Source: SHADAC analysis of the civilian non-institutional population in the 2013 CPS. Underinsured is defined as the percentage of people whose family has spent 10% or more of their income in health care in the past year.

DOMAIN #2: ACCESS

The U.S. Institute of Medicine defines health care access as “the timely use of personal health services to achieve the best health outcomes.”¹⁴ Even among those with health insurance coverage, financial and non-financial access barriers can persist.¹⁵ We use 11 indicators to monitor health care access in this study—more indicators than in any other study domain.¹⁶ For the access domain, we obtained data from the National Health Interview Survey (NHIS), the National Survey on Drug Use and Health (NSDUH) and 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.

ACCESS MEASURES

Significantly More Kentuckians Reported a Usual Source of Care

Having a *usual source of care* is “a summary measure of adequate access to primary care”¹⁷ and some studies have found it to be even more important for health outcomes than having health insurance.¹⁸ The measure we use is from the 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.

Overall, the indicators paint a nuanced portrait of health care access since implementation of the ACA in Kentucky. The Commonwealth has seen some improvements, including significant increases in Kentuckians reporting a usual source of care and having a provider visit in the past year, as well as a reduction in elderly Kentuckians making changes to their medications due to cost. In other cases, measures have remained stable. In some cases, this stability may be positive. For example, more than nine in ten Kentuckians continue to find a doctor when needed. However, in other cases, gaps persist in the Commonwealth. For example, more than one in ten young adult Kentuckians have an unmet need for alcohol abuse treatment.

Between 2012-2015, the percentage of Kentuckians of all ages reporting a usual source of care increased 7.4 percentage points, a statistically significant change from 82.3% to 89.7% (see Figure 2.1). By breaking out age groups, we find this measure did not change significantly for children (96.6% in 2015), but it did increase significantly for non-elderly adults, 8.8 percentage points from 75.6% to 84.4% (data were not available for elderly adults). This pattern of an increase in usual source of care for non-elderly adults while children remained stable suggests the improvement in this indicator resulted from the ACA’s coverage expansions, which mostly targeted non-elderly adults.

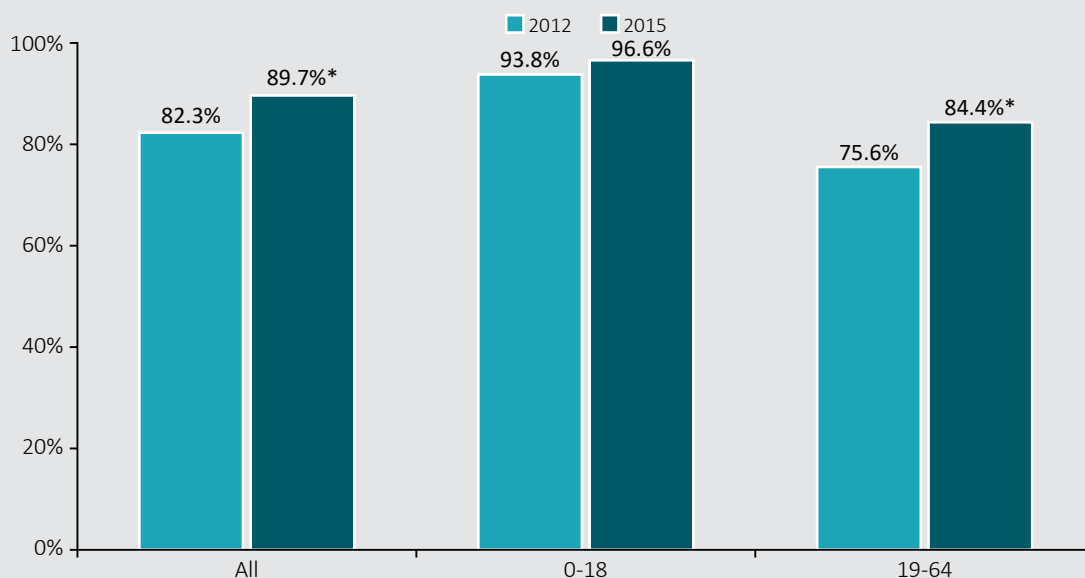


FIGURE 2.1:
Usual Source of Care by Age Category, Kentucky, 2012-2015

*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center.

Fewer Elderly Kentuckians Responded to Drug-cost Barriers

Another indicator of access is *changes in prescription drug usage due to cost*. This is a summary measure that includes: 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 negatively affect their health. For this indicator, estimates were not available for Kentuckians of all ages or children, but they were available for non-elderly and elderly adults.

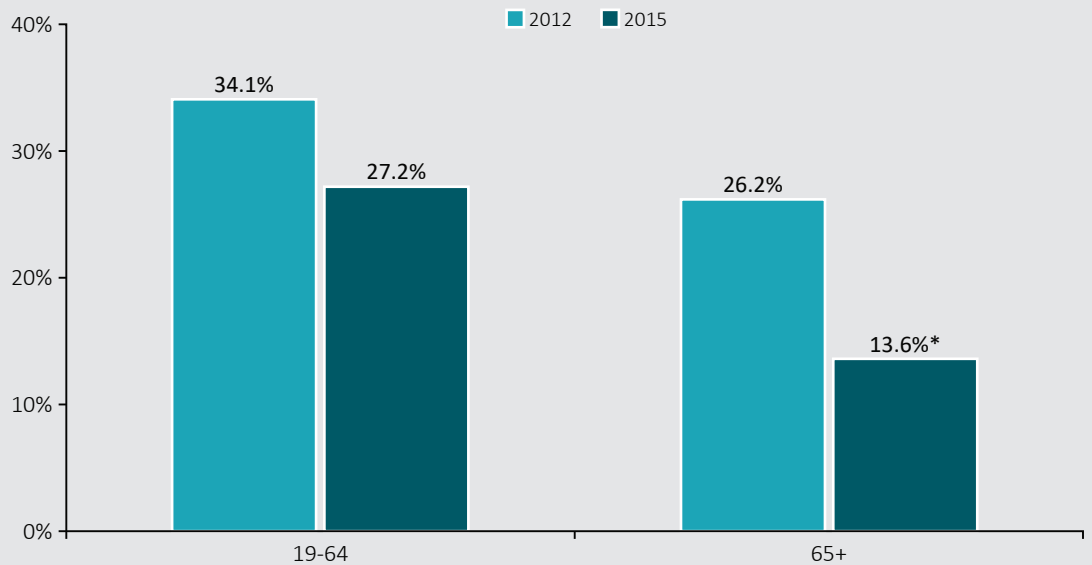
Since 2012, the percentage of non-elderly adults reporting making changes to prescription drugs due to cost did not change significantly (27.2% in 2015) (see Figure 2.2). However, the percentage of elderly Kentuckians who reported changes in prescription drugs due to cost declined a statistically significant 12.6 percentage points, from 26.2% in 2012 to 13.6% in 2015. That improvement among elderly Kentuckians may be a result of the ACA's provisions to improve the affordability of prescription drugs specifically for Medicare beneficiaries.

Prior to the ACA, most Medicare Part D prescription drug plans had a coverage gap, also known as a “donut hole,” in which beneficiaries had to pay 100% of the cost of their medications out of pocket.¹⁹ The ACA will gradually close that gap by 2020.²⁰ Consistent with our findings, data from the U.S. Centers for Medicare & Medicaid Services found that Kentucky Medicare beneficiaries saved an average of \$1,108 in 2015 because of the ACA, which was slightly higher than the U.S. average of \$1,054.²¹

The ACA's closing of the Medicare Part D “donut hole” may have improved affordability of medications for elderly Kentuckians.

FIGURE 2.2:

Skipping, Delaying, or Altering Prescription Drug Use Due to Cost, Kentucky, 2012-2015 (ages 19-64 & 65+)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center.

More Kentuckians Visited Health Provider in the Past Year

Having a visit with a health care provider during the past year is another way to gauge access to health care. For this measure, we include *visits to a general provider in the 12 months* preceding the survey. Between 2012-2015, there was a statistically significant 4.9 percentage point increase

in Kentuckians of all ages who reported visiting a health care provider in the past year, from 73.8% to 78.7% (see Figure 2.3). We did not find significant changes among non-elderly or elderly adults, but there was a significant 7.0 percentage point increase in children who had a provider visit, from 85.8% in 2012 to 92.8% in 2015.

DOMAIN #2: ACCESS

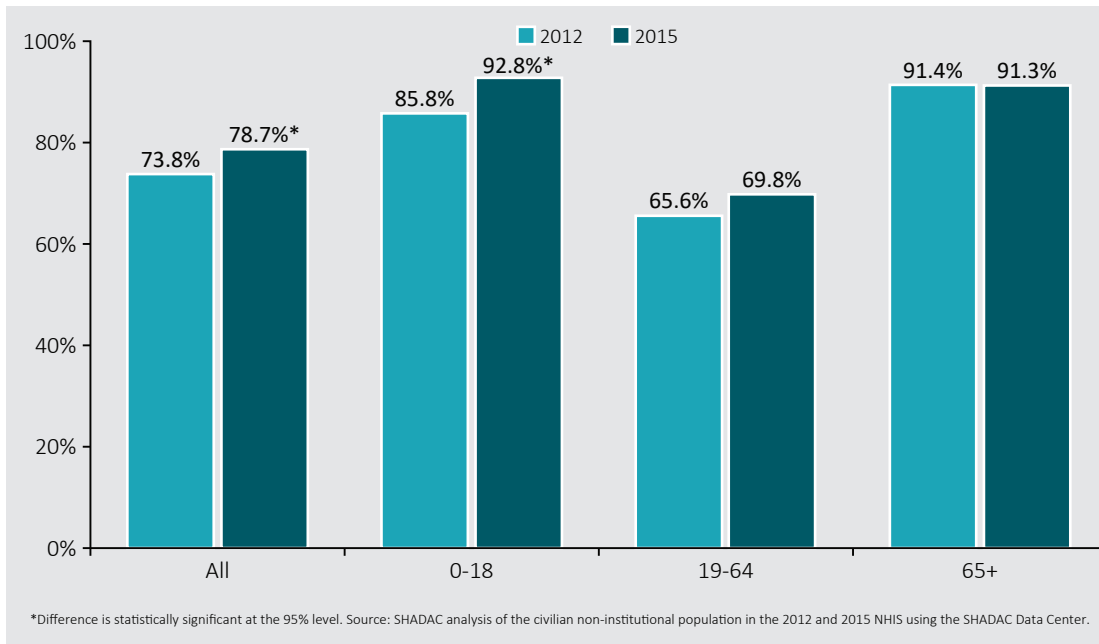


FIGURE 2.3:
Provider Visit in Past Year by Age Category, Kentucky, 2012-2015

One in Four Kentuckians Used Emergency Department

We also examined the prevalence of visits to an emergency department (ED) within the past year. 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.”

Despite competing arguments that the ACA could reduce ED use by allowing people to obtain care

elsewhere or that it could increase ED use by reducing the cost-barrier of uninsurance, we did not find any significant changes. Figure 2.4 shows no statistically significant changes in the percentage of Kentuckians of all ages reporting that they visited an ED in the past year (25.5% in 2015). Similarly, we found no significant changes for any age subgroups—children, non-elderly adults and elderly adults.

For this measure, we also present comparisons between Kentucky and neighboring states. In 2015, Kentucky’s ED use rate of 25.5% was significantly

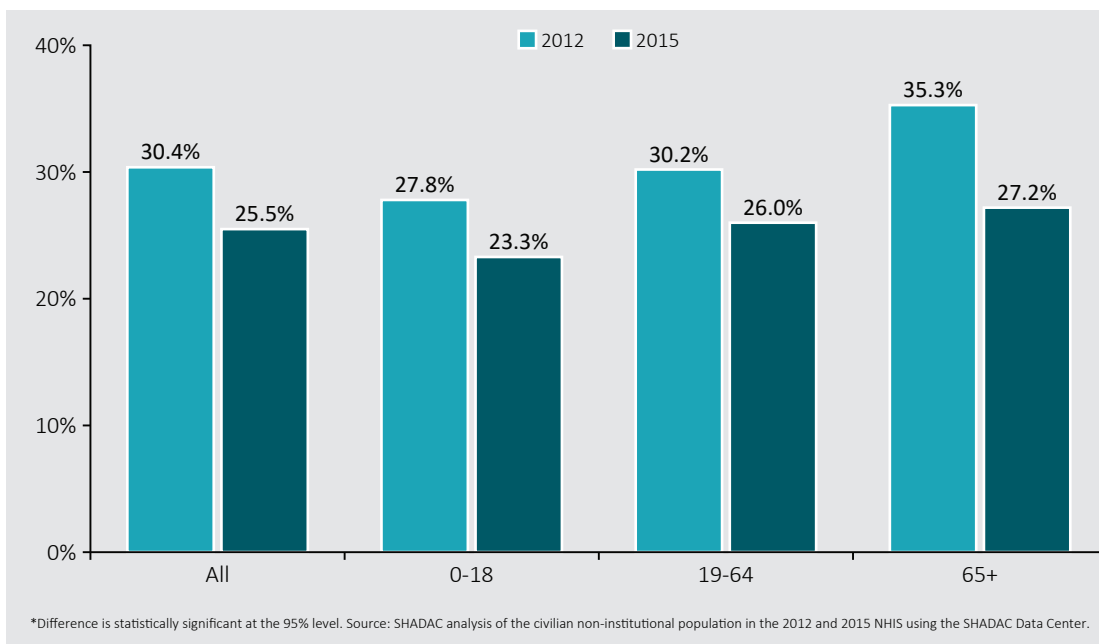


FIGURE 2.4:
Emergency Department Visits in the Past Year by Age Category, Kentucky, 2012-2015

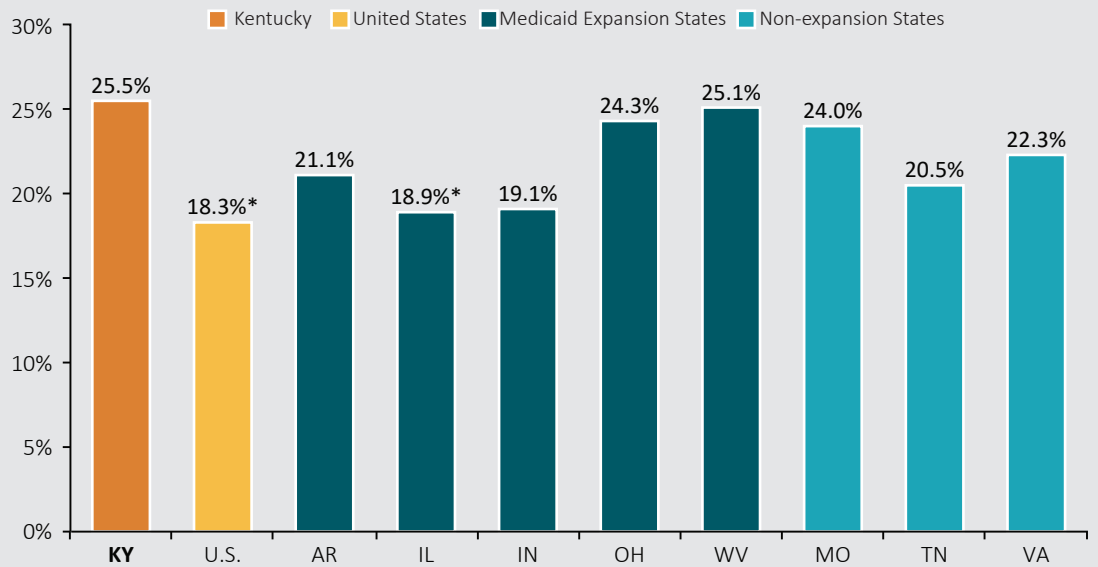
higher than the U.S. rate of 18.3% and the rate of Illinois (18.9%), but it was not statistically different from the other seven comparison states (see Figure 2.5). Additionally, like Kentucky, neither the U.S. nor any comparison states experienced significant changes in the percentage of people who used an ED in the prior year (see Figure 2.6).

Over 9 in 10 Kentuckians Remained Able to Find a Provider

Being able to find a doctor when needed is an important component of health access. In 2015, 94.9% of Kentuckians of all ages said that they

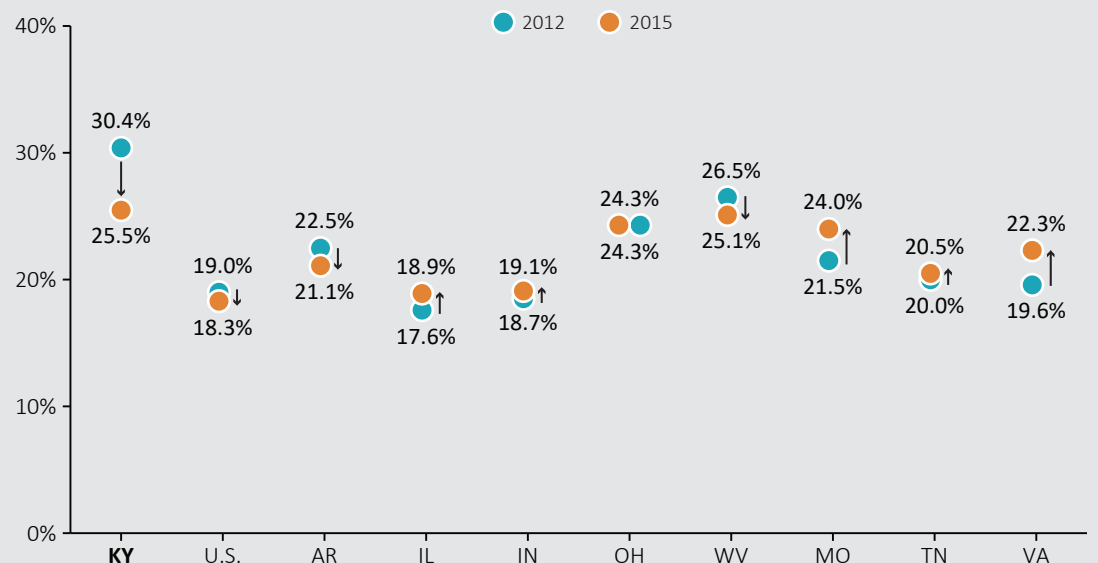
were able to find a doctor when needed, which was not statistically different from 2012 (see Figure 2.7). We did not find statistically significant changes for children, non-elderly or elderly adults, either. Although there was no significant increase, the fact that more than nine in ten Kentuckians continue to find a provider when needed is positive. That stability is notable because it suggests that concerns the ACA could worsen provider shortages may have not been realized in Kentucky.

FIGURE 2.5:
Emergency Department Visits in the Past Year, Kentucky Compared to Neighboring States and U.S. Rate, 2015 (all ages)



*Difference is statistically significant across states (e.g. Kentucky vs. Arkansas) at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center. Note: While Indiana is a Medicaid expansion state, the state did not expand its Medicaid program until 2015.

FIGURE 2.6:
Emergency Department Visits in the Past Year, Kentucky Compared to Neighboring States and U.S. Rate, 2012 & 2015 (all ages)



*Difference is statistically significant within the state (e.g. Arkansas 2012 estimate vs. Arkansas 2015 estimate) at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center.

DOMAIN #2: ACCESS

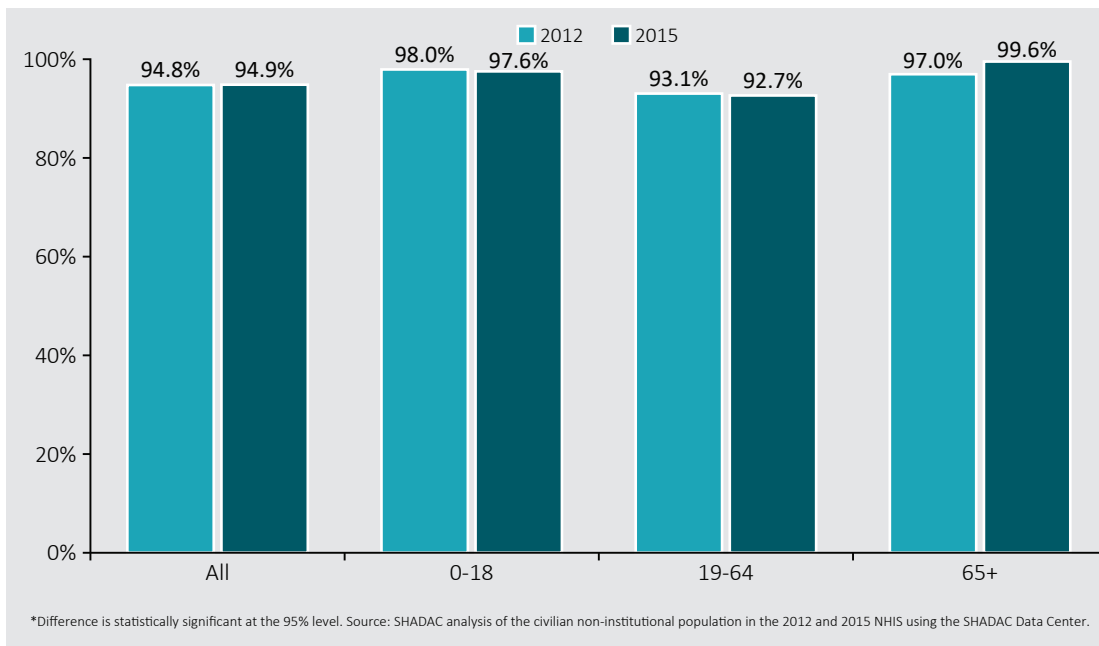


FIGURE 2.7:
Found Doctor When Needed by Age Category, Kentucky, 2012-2015

Over 9 in 10 Kentuckians Found a Doctor Who Accepts Their Insurance

When seeking medical care, some people face barriers with *providers not accepting their insurance coverage*. From 2012-2015, there was no significant change in Kentucky for the rate of patients reporting that providers would accept their coverage, with 97.5% of Kentuckians of all ages reporting they found a doctor who accepted their insurance (see Figure 2.8). There were also no significant changes for children or non-elderly adults (data were not available for elderly adults). This stability is particularly relevant to concerns

that individuals may face trouble finding providers who accept their insurance as health insurers rely more on narrow-network plans to contain costs; so far, we have not found evidence that Kentuckians are facing more problems finding providers in their insurance networks.

Mental Health and Substance Use

People with mental illness and/or substance use disorders often require specialty health care services and may face unique barriers to treatment.^{22,23}

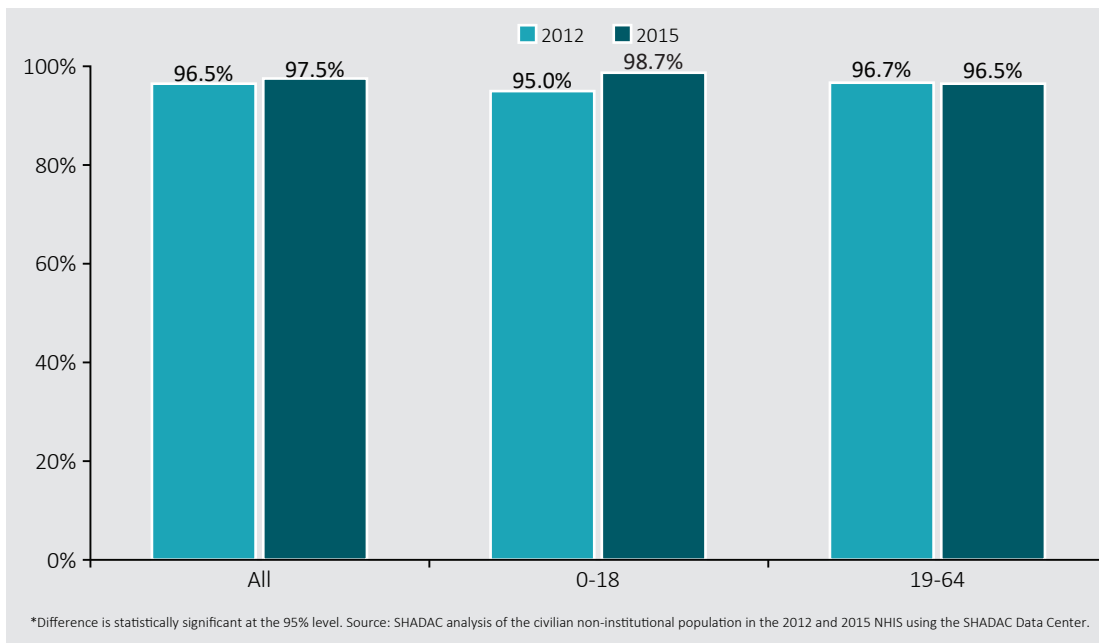


FIGURE 2.8:
Told Provider Accepts Insurance by Age Category, Kentucky, 2012-2015

In this section we present state-level data on prevalence of mental illness and unmet need for treatment of substance use disorders. The U.S. Substance Abuse and Mental Health Services Administration conducts an annual survey, the National Survey on Drug Use and Health (NSDUH), that collects information about the prevalence of mental health conditions and substance use disorders, along with key indicators related to access to services for these conditions. Because the sample size is limited, data from this survey are pooled across two years to produce state-level estimates (i.e., the 2012 estimate is actually pooled 2011-2012 data, and the 2014 estimate is actually pooled 2013-2014 data).

1 in 5 Kentucky Adults Reported Having a Mental Illness

The NSDUH provides estimates of 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.” In 2015, 5.1% of adult Kentuckians (ages 18+) reported a serious mental illness, which was not statistically different from 2012. About one in five Kentuckians reported any mental illness (20.1%) in 2015, although this also was statistically unchanged since 2012 (see Figure 2.9). While it would not be expected for the ACA to reduce the prevalence of mental illness in Kentucky, the

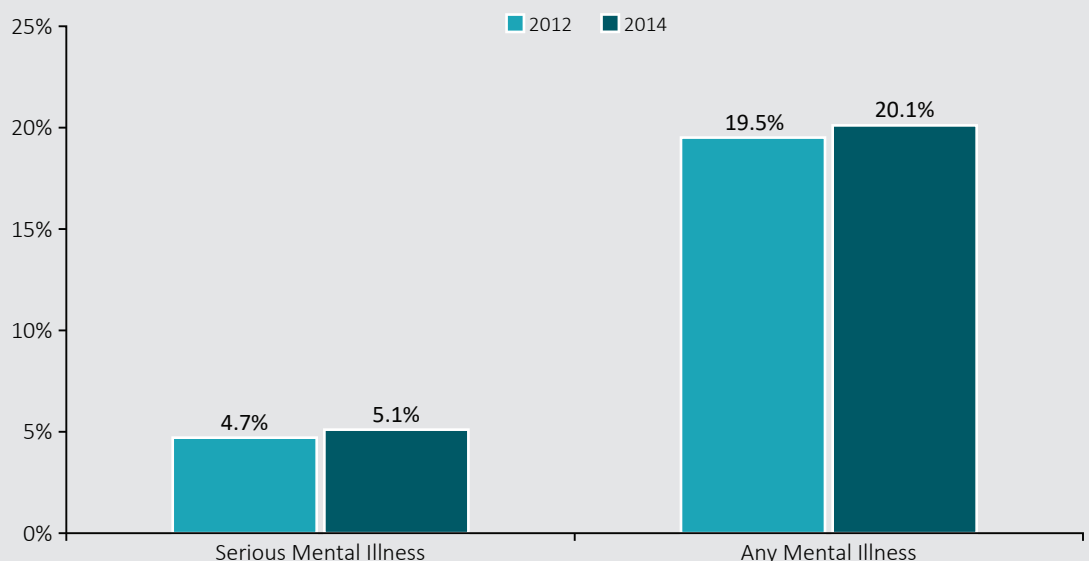
law’s coverage expansions and provisions requiring health insurance to cover treatment of mental illness were designed to enhance access to health care for people with these conditions.

For more than a decade, Kentucky has experienced an increase in the number of drug overdose deaths, with many of these related to prescription opioid painkillers and their chemical cousin, heroin.²⁵ Similar to how it addresses mental illness, the ACA was designed to address substance use by increasing health insurance coverage along with provisions to require health insurance to cover treatment of substance use disorders. This section examines the percentage of Kentuckians who needed but did not receive treatment for alcohol abuse and illicit drug abuse, which includes both illegal drugs (e.g., marijuana, cocaine, heroin) and misuse of prescription medications (e.g., painkillers, stimulants).

Young Adults Reported Greatest Unmet Need for Substance Use Treatment

From 2012-2014, Kentucky did not experience statistically significant changes in the percentage of people (ages 12+) who needed but did not receive treatment for alcohol abuse or illicit drug abuse. Other research has shown increases in treatment of substance use disorders since Kentucky implemented the ACA, but it is possible that these increases have not been large enough to effect a large reduction in unmet need for treatment.²⁶ Additionally, it is likely that by using pooled 2013/2014 data, any potential effects in 2014 may have been diluted in these estimates.

FIGURE 2.9: Serious and Any Self-Reported Mental Illness, Kentucky, 2012-2014 (ages 18+)



*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the 2011/2012 and 2013/2014 National Survey on Drug Use and Health.

DOMAIN #2: ACCESS

Because of the limitations of these 2013/2014 NSDUH data, future studies of substance use in Kentucky should examine these indicators using data collected only since the implementation of the ACA (e.g., 2014/2015 pooled data).

Despite the limitations of these data for understanding the impacts of ACA implementation in Kentucky, they provide important context around the need for treatment of substance use disorders. For both indicators, the rates for young adults (ages 19-26) are more than double the overall rates (ages 12+): In 2015, 5.7% of young adults had an unmet need for illicit drug abuse

treatment, compared to the overall rate of 2.3% (see Figure 2.10).

Also in 2015, 11.6% of young adults had an unmet need for alcohol abuse treatment, compared to the overall rate of 5.5% (see Figure 2.11). When these data are considered along with health insurance coverage rates, this suggests that many young adult Kentuckians who need treatment for substance use disorders likely gained health insurance that would cover it; however, young adults still have the highest rates of uninsurance in the Commonwealth, posing a barrier to obtaining needed treatment.

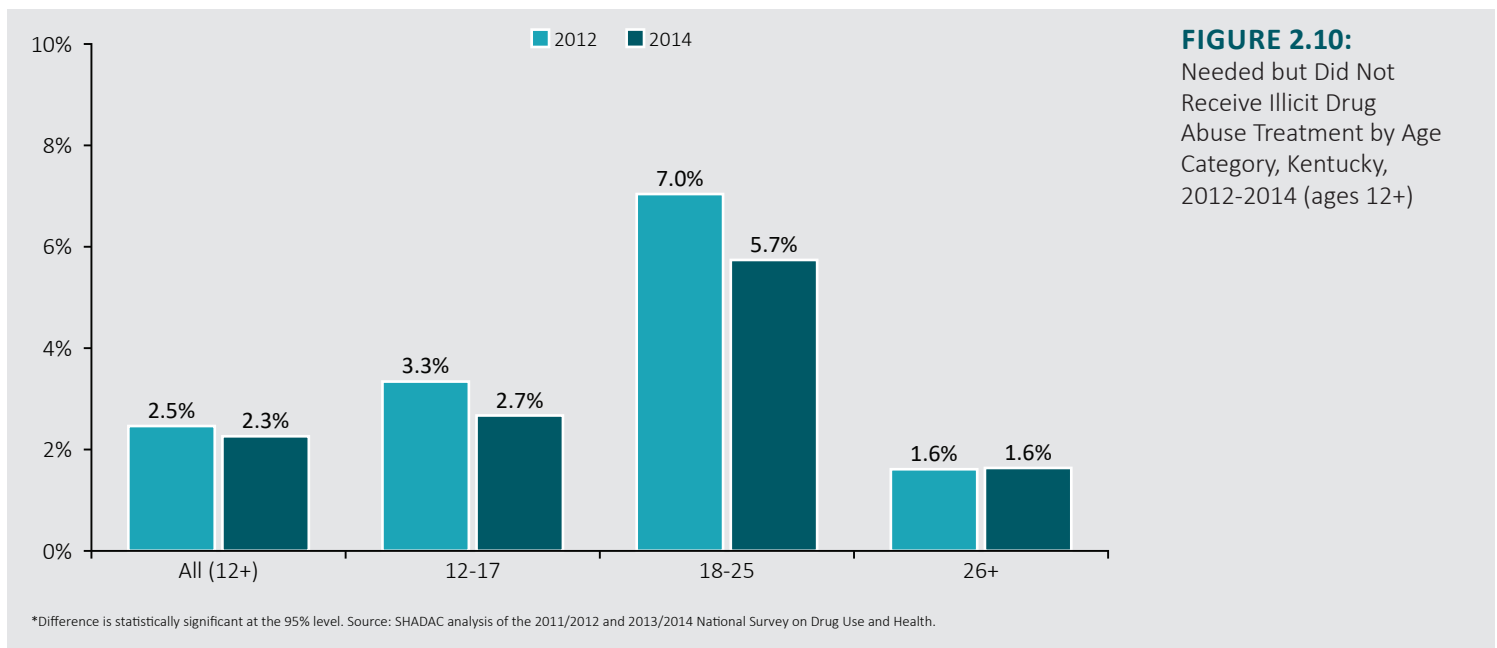


FIGURE 2.10:
Needed but Did Not Receive Illicit Drug Abuse Treatment by Age Category, Kentucky, 2012-2014 (ages 12+)

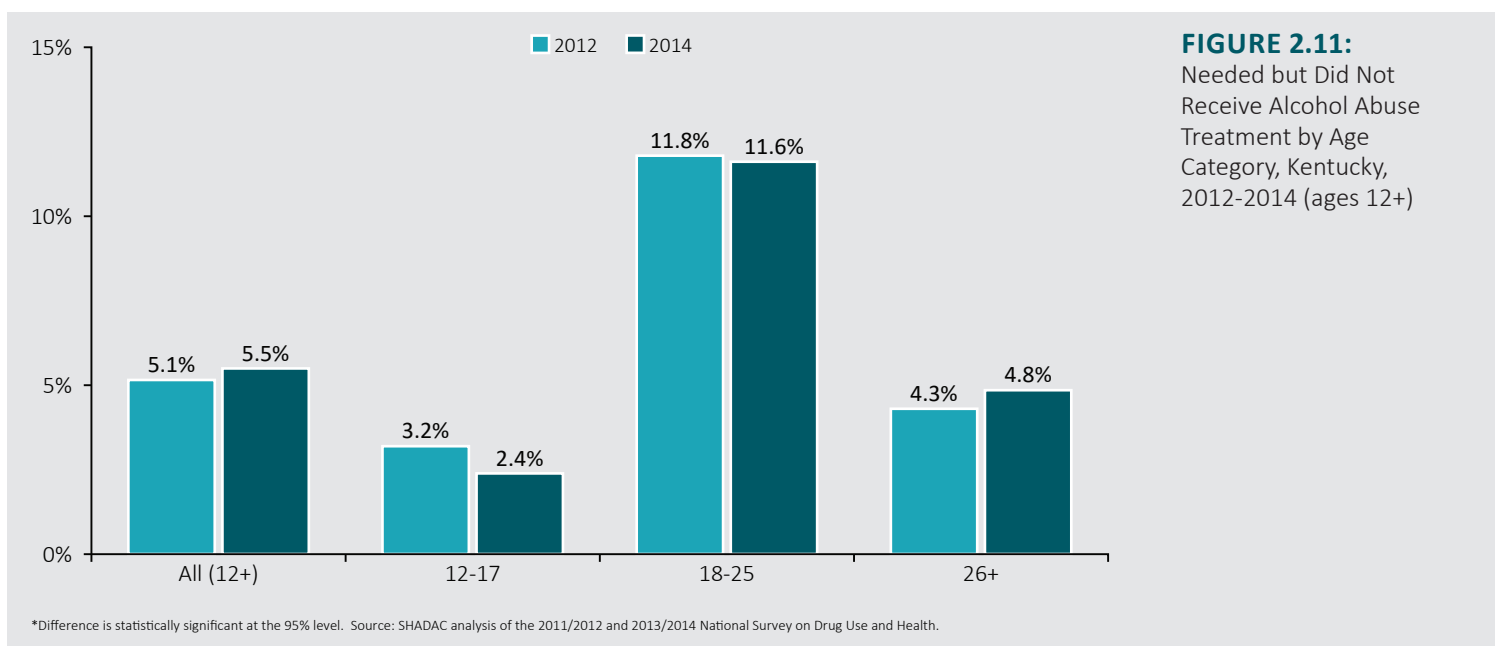


FIGURE 2.11:
Needed but Did Not Receive Alcohol Abuse Treatment by Age Category, Kentucky, 2012-2014 (ages 12+)

Dental Treatment

Access to dental care is a concern because research has found that poor oral health is associated with other medical conditions, such as cardiovascular disease, diabetes and microbial infections.²⁷ In this section, we present data from the BRFSS to track the percentage of *adults who had no dental visit in the past year*. Recommendations on frequency of preventive dental visits vary, but some research has suggested annual visits for people at low risk of dental disease and more frequent visits for those at higher risk.

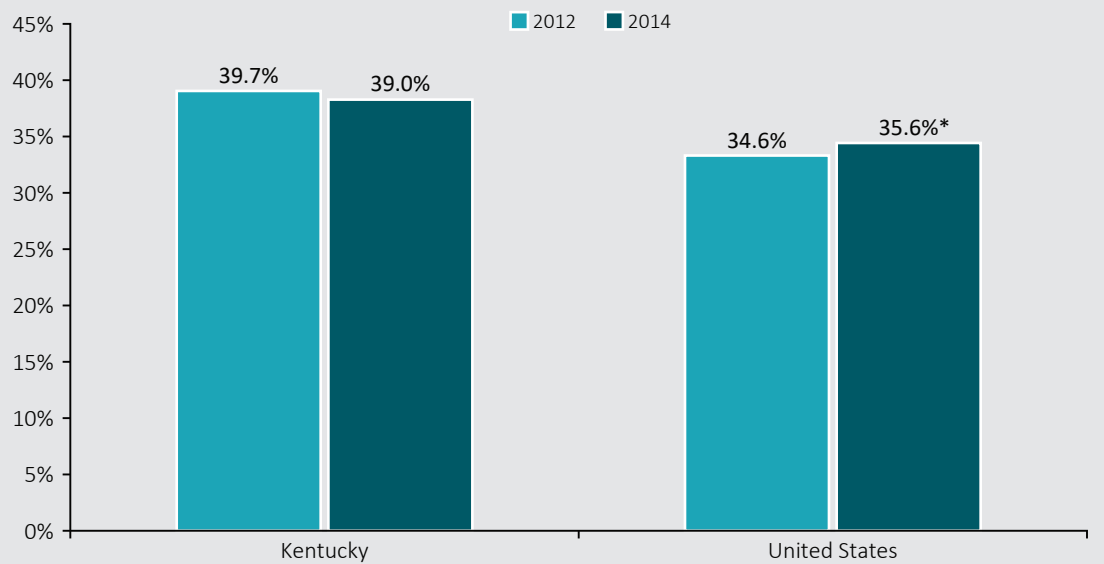
Research has found that poor oral health is associated with other medical conditions.

Nearly 4 in 10 Kentuckians Reported No Dental Visits In Past Year

From 2012-2014, there was no statistically significant change in the percentage of Kentucky adults reporting they hadn't visited a dentist in the past year (39.0%) (see Figure 2.12). In contrast with Kentucky's stability in this measure, the U.S. rate worsened during the same time, with a statistically significant increase in the percentage of adults reporting no dental visits in the past year.

Although dental health was not a key focus of the ACA, it did include provisions that could support access to dental care, such as allowing dental policies to be sold through health insurance marketplaces, and allowing states to cover dental services through Medicaid expansion benefits (an option that Kentucky adopted). Because data for this indicator are not currently available past 2014, it is difficult to determine whether the ACA has affected use of dental services; because this indicator examines use of dental services over the past year, any changes from 2014 may not appear until later estimates are available.

FIGURE 2.12:
No Dental Visit in the Last Year, Kentucky and the U.S., 2012-2014 (ages 18+)



Source: SHADAC analysis of the 2012 & 2014 BRFSS.

DOMAIN #3: COST

Health care costs are a topic of concern for many stakeholders in Kentucky. Our study focuses primarily on issues of health care costs for families, such as the out-of-pocket costs they spend for health care and whether they have difficulties paying medical bills. While families throughout the U.S. experience pressures from health care costs, these are particularly a concern in Kentucky, which in 2015 had a significantly lower median household income than the U.S. (\$45,215 versus \$55,775) and a higher rate of people in poverty (18.5% versus 14.7%).²⁹ We also include a measure of the impact of the ACA on Kentucky hospitals: uncompensated care. Additionally, because of the large role that employers play in Kentucky's health insurance landscape—covering half of Kentuckians—we include measures of ESI premiums to examine whether and how these have grown. Data sources for the cost measures include the

NHIS, the MEPS-IC and the CPS. Our estimates in the cost domain cover all ages, except where noted.

Overall, we found the Commonwealth experienced improvements in most of our measures of cost. Since implementation of the ACA, fewer Kentuckians report trouble paying medical bills, and fewer report delaying or going without needed health care due to cost. Additionally, Kentucky hospitals have seen a decline in charity care and self-pay charges for the uninsured—most likely due to the declining uninsurance rate. However, Kentuckians' median out-of-pocket spending for health care has remained stable, and we found evidence that premiums for employer-sponsored insurance may be continuing their pre-ACA trends of growth.

COST MEASURES

Fewer Kentuckians Reported Trouble Paying Medical Bills

To measure the burden of health care costs on individuals and families, we track the percentage of Kentuckians reporting trouble paying medical bills. 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."

In 2012, nearly half of Kentuckians of all ages (49.1%) reported that their families had trouble paying medical bills. By 2015, this dropped a statistically significant 11.5 percentage points, to 37.6% of Kentuckians (see Figure 3.1). We also found statistically significant declines in trouble paying medical bills for children, dropping from 52.3% to 40.9%, and non-elderly adults, dropping from 52.7% to 39.8%. However, we did not find a significant decline among elderly adults, with 21.0% reporting trouble paying medical bills in 2015.

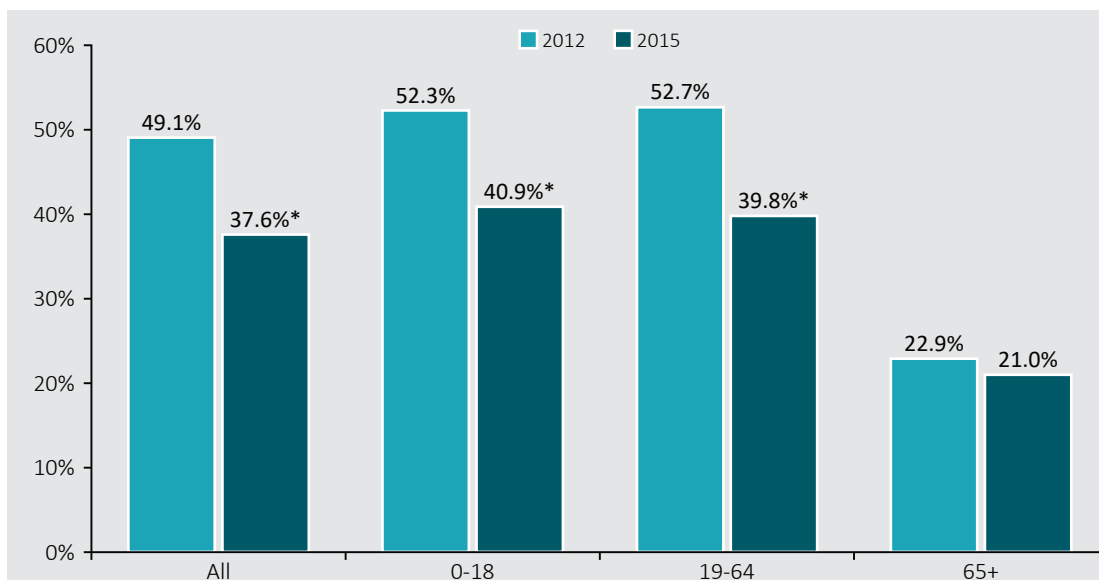


FIGURE 3.1:

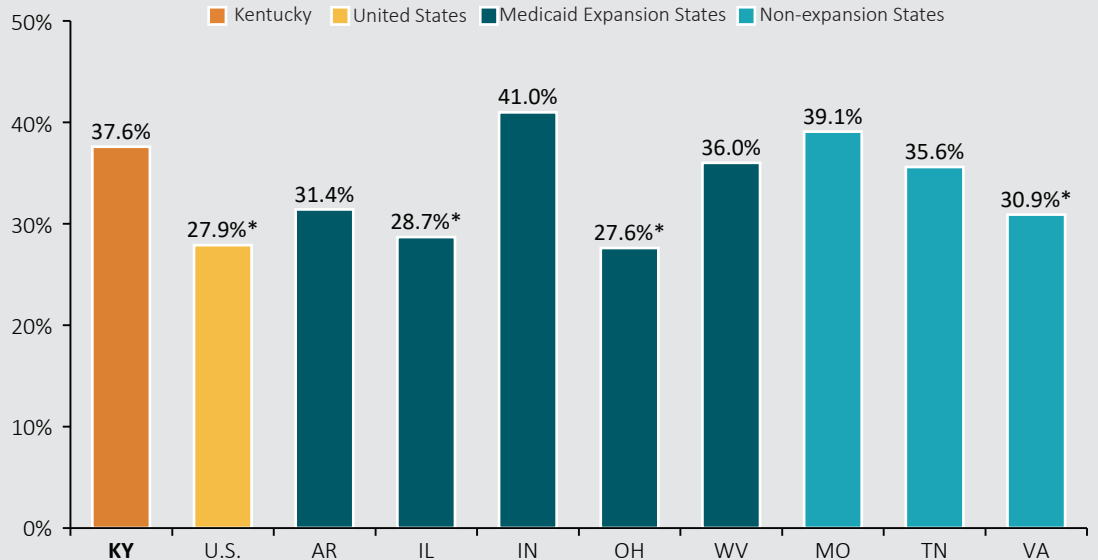
Trouble Paying Medical Bills by Age Category, Kentucky, 2012-2015

*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center. This estimate reports the percentage of people who had trouble paying off medical bills in the last year or were currently paying off medical bills.

We also compare this metric to the U.S. and Kentucky's neighboring states. Despite its statistically significant reduction in trouble paying medical bills, Kentucky's rate of 37.6% remained significantly higher than the U.S. rate of 27.9% in 2015, as well as three neighboring states (IL, OH, VA) (see Figure 3.2).

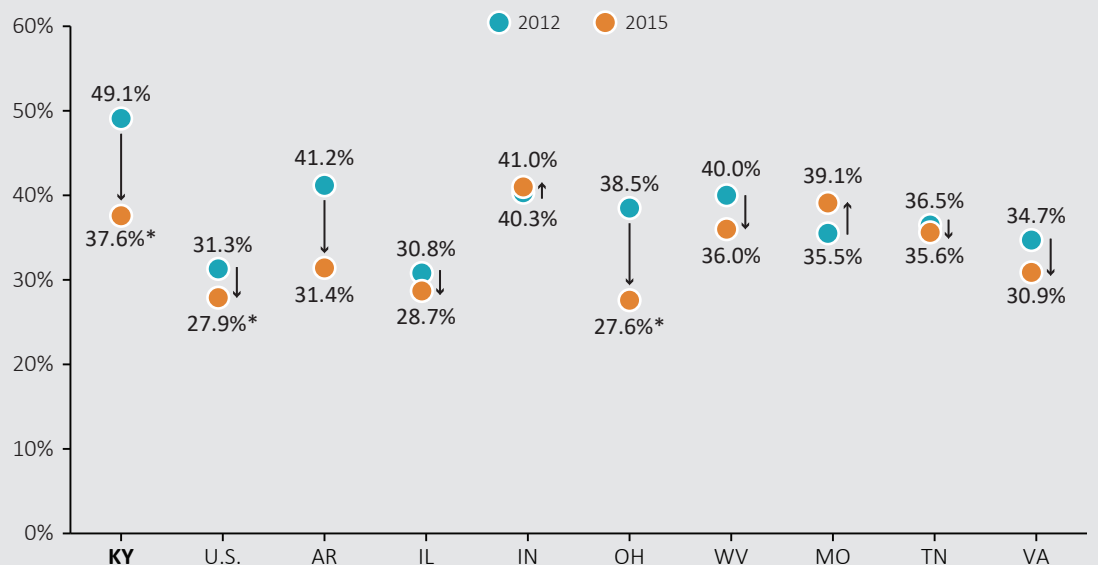
Kentucky's rate was not significantly different from our other comparison states. However, between 2012-2015, only Kentucky, the U.S. and Ohio saw significant declines in trouble paying medical bills; none of the other comparison states experienced significant changes (see Figure 3.3).

FIGURE 3.2:
Trouble Paying Medical Bills, Kentucky Compared to Neighboring States and U.S. Rate, 2015 (all ages)



*Difference is statistically significant across states (e.g. Kentucky vs. Arkansas) at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center. This estimate reports the percentage of people who had trouble paying off medical bills in the last year or were currently paying off medical bills. Note: While Indiana is a Medicaid expansion state, the state did not expand its Medicaid program until 2015.

FIGURE 3.3:
Trouble Paying Medical Bills, Kentucky Compared to Neighboring States and U.S. Rate, 2012 & 2015 (all ages)



*Difference is statistically significant within the state (e.g. Arkansas 2012 estimate vs. Arkansas 2015 estimate) at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center. This estimate reports the percentage of people who had trouble paying off medical bills in the last year or were currently paying off medical bills.

Delayed and Forgone Care Declined Significantly

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.

Between 2012-2015, the percentage of Kentuckians of all ages who reported delaying needed care due to cost dropped a statistically significant 5.2 percentage points, from 11.7% to 6.5% (see Figure 3.4). While estimates were not available for children, non-elderly adults experienced a significant 7.9 percentage point decline (from 16.9% to 9.0%), and elderly adults experienced a significant 3.0 percentage point decline (from 5.1% to 2.1%).

We also found significant declines in Kentuckians going without needed care due to cost. Between 2012-2015, the percentage of Kentuckians of all ages reporting forgone care dropped by approximately half, from 10.0% to 4.9% — a statistically significant decline of 5.1 percentage points (see Figure 3.4). While estimates for children and elderly adults were not available, we found that non-elderly adults also experienced a significant decline in forgone care, from 14.4% in 2012 to 7.3% in 2015 (a 7.1 percentage point decline).

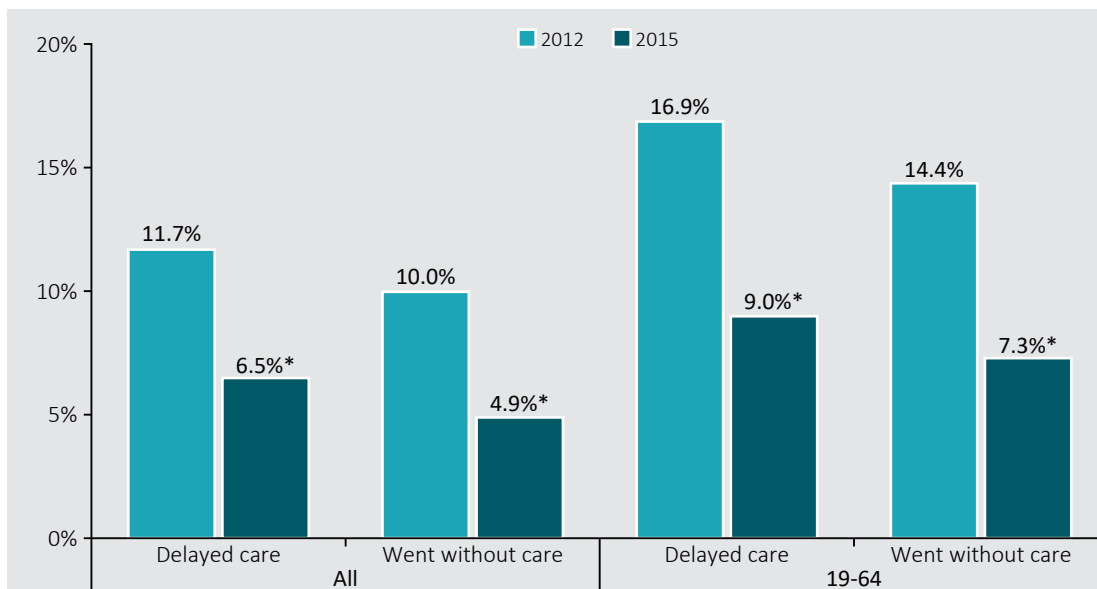


FIGURE 3.4: Delayed or Went Without Needed Care Due to Cost by Age Category, Kentucky, 2012-2015

*Difference is statistically significant at the 95% level. Source: SHADAC analysis of the civilian non-institutional population in the 2012 and 2015 NHIS using the SHADAC Data Center.

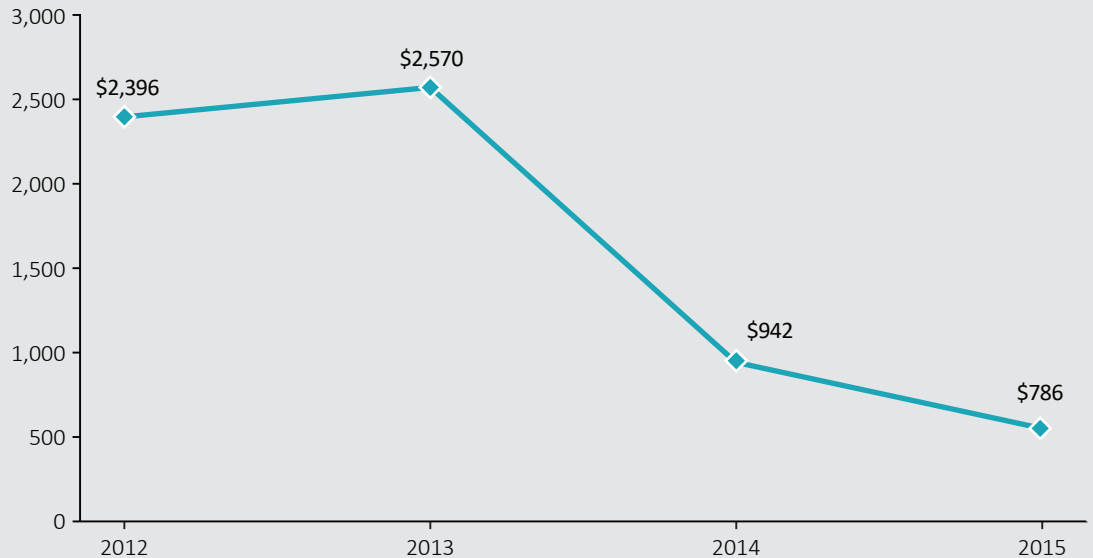
Hospital Charity Care and Self-Pay Charges Declined 67%

Before the ACA, hospitals often provided care to patients without insurance for which they received no payment or only partial payment, commonly called “uncompensated care.” By reducing the number of people without health insurance, the ACA was expected also to reduce hospitals’ uncompensated care burden. As a proxy for uncompensated care, we use data on hospital charges for charity care or self-pay bills (see Figure 3.5). It is important to note that these data do not include bad debt from people with insurance, such as if a person with coverage does not pay cost sharing (e.g., deductible) owed to the hospital.

Between 2012 and the first year of ACA implementation in Kentucky, 2014, charity care and self-pay charges dropped by more than half—from nearly \$2.4 billion to \$942 million. The decline continued into 2015, dropping to \$786 million.³⁰ Overall, between our baseline year of 2012 and 2015, these uncompensated charges dropped 67%. Because these data come from hospital data and not a statistical sample, no significance testing was performed.

FIGURE 3.5:

Hospital Charity Care and Self-Pay Charges in Dollars (millions), Kentucky, 2012-2015



Source: SHADAC analysis of 2012 to 2015 data from the Kentucky Cabinet for Health and Family Services' Kentucky Hospital Administrative Claims Data.

Premiums for Employer-sponsored Single Coverage Increased, Family Coverage Statistically Unchanged

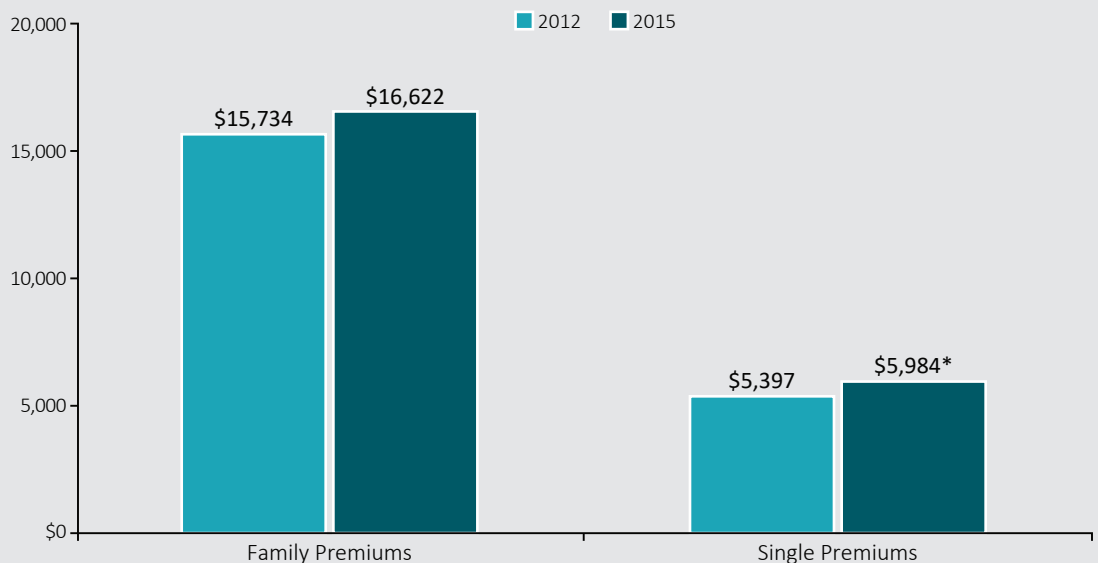
Figure 3.6 provides estimates of *spending on health insurance premiums*. In 2015, the average annual single premium for private-sector employer-sponsored insurance was \$5,984, a statistically significant increase of \$587 from 2012. The average family premium for employer-based coverage was \$16,622, but this was not significantly different from 2012 (see Figure 3.6). To better understand these findings, it is important to consider that ESI premiums were increasing

over the long-term prior to implementation of the ACA.³¹ Although ESI premiums for family coverage have not changed significantly since 2012, the significant increase in single-coverage premiums suggests that ESI coverage may be continuing its pre-ACA trend of increasing costs.

To measure the impact of health care costs on individuals, we use a measure of median out-of-pocket health care costs. This includes health insurance premiums and other money that individuals spend on health care, such as deductibles, co-pays and co-insurance.

FIGURE 3.6:

Average Premium per Private Sector Employee in Dollars, Kentucky, 2012-2015



*Difference is statistically significant at the 95% level. Source: 2012 and 2015 MEPS-IC. These estimates represent the total annual premium cost.

DOMAIN #3: COST

From 2012-2015, there was no statistically significant increase in annual median out-of-pocket costs for Kentuckians (all ages) at \$1,270 in 2015 (see Figure 3.7). The stability in out-of-pocket costs since implementation of the ACA in Kentucky suggests that the expansions of coverage seen in the Commonwealth have not reduced the amount of

money Kentuckians are paying for health care on average. However, these findings also run counter to concerns raised by some stakeholders that individuals' out-of-pocket spending on health care has increased substantially since implementation of the ACA through high deductibles or other forms of cost-sharing.³²

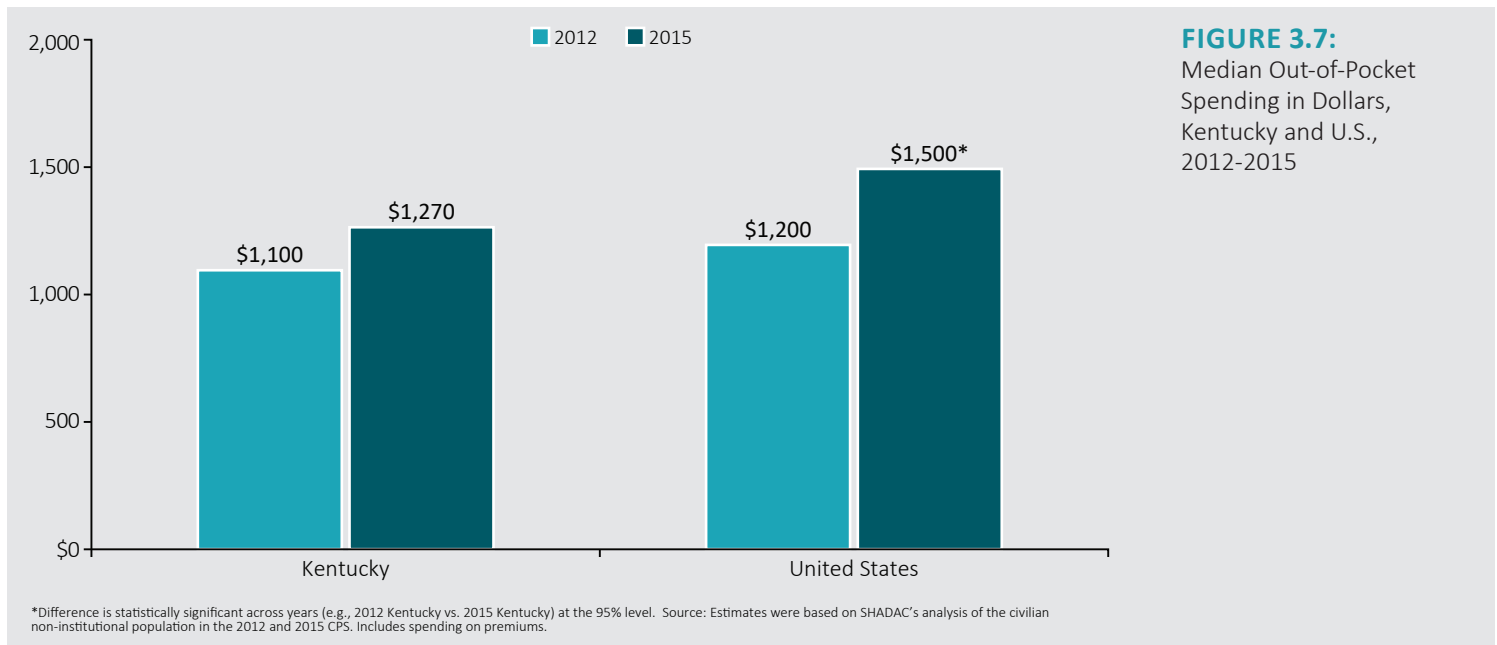


FIGURE 3.7:
Median Out-of-Pocket Spending in Dollars, Kentucky and U.S., 2012-2015

DOMAIN #4: QUALITY

Improving the quality of health care in the U.S. was a key goal of the ACA. There are a number of ways in which the law is focused on improving the quality of care, including avoiding preventable hospitalizations, increasing the utilization of preventive care, and encouraging recommended health practices, such as breastfeeding for infants. We include several metrics that relate to quality of care, focusing both on hospital quality and aggregate measures of preventive care utilization. For the quality domain, our data sources include the BRFSS, the Youth Risk Behavior Surveillance System (YRBSS), the Healthcare Cost and Utilization Project (HCUP) and vital statistics systems. Data in this domain cover all ages except where noted.

While some of the indicators are available through 2015, some are only available through 2014. Additionally, 2012 data were not available for all of the measures; in these cases, we use 2013 as our baseline.

While we found some improvements in measures of quality, these have been more limited than in the domains of coverage, access and cost. For example, rates of newborn breastfeeding in Kentucky have increased since 2012, and more Kentuckians are reporting receiving recommended colorectal cancer screenings. However, most of our measures remained stable—such as low birth weight, cholesterol awareness and unprotected sex among high school students—and one measure worsened (diabetes short-term admissions).

QUALITY MEASURES

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.”³³ In this study, we look at potentially avoidable hospitalizations for three chronic conditions: diabetes, hypertension, and asthma. The data for these come from AHRQ’s HCUP dataset.³⁴

Figure 4.1 presents data on potentially preventable hospitalizations as the number of hospitalizations per 100,000 adults. For diabetes short-term complications, approximately 93 out of 100,000 adults were admitted in 2014, an increase from 84 in 2012. In contrast, both hypertension and asthma-related admissions decreased over the same period, from approximately 68 to 58 per 100,000 for hypertension and 58 to 44 per 100,000 for asthma. Although these data suggest Kentucky may be experiencing some improvements in quality of health care, future research may be needed to determine whether these continue past the first year of ACA implementation. Because these data come from hospital admissions records and not a statistical sample, no significance testing was performed.

Death Rate in Low Mortality Admissions Stable

Figure 4.2 shows the number of deaths per 1,000 patients of all ages who were hospitalized for conditions that typically do not result in mortality. All cases treated in hospitals are classified according to groups called diagnosis-related groups (DRGs). DRGs are used to help determine how much a hospital gets paid for its services, adjusted for severity and other factors.³⁵ 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 provide lower quality care.³⁶

The mortality rate presented here is risk-adjusted to take into account patients’ prior health status. Figure 4.2 shows that in 2014, Kentucky’s mortality rate for “low-mortality DRGs” was 0.325 per 1,000, only slightly lower than the state’s 2012 baseline rate of 0.330 per 1,000. However, these rates may vary from year to year (the 2013 rate was 0.233 per 1,000), so future research may be needed to follow these mortality trends in following years. Because these data come from hospital admissions records and not a statistical sample, no significance testing was performed.

DOMAIN #4: QUALITY

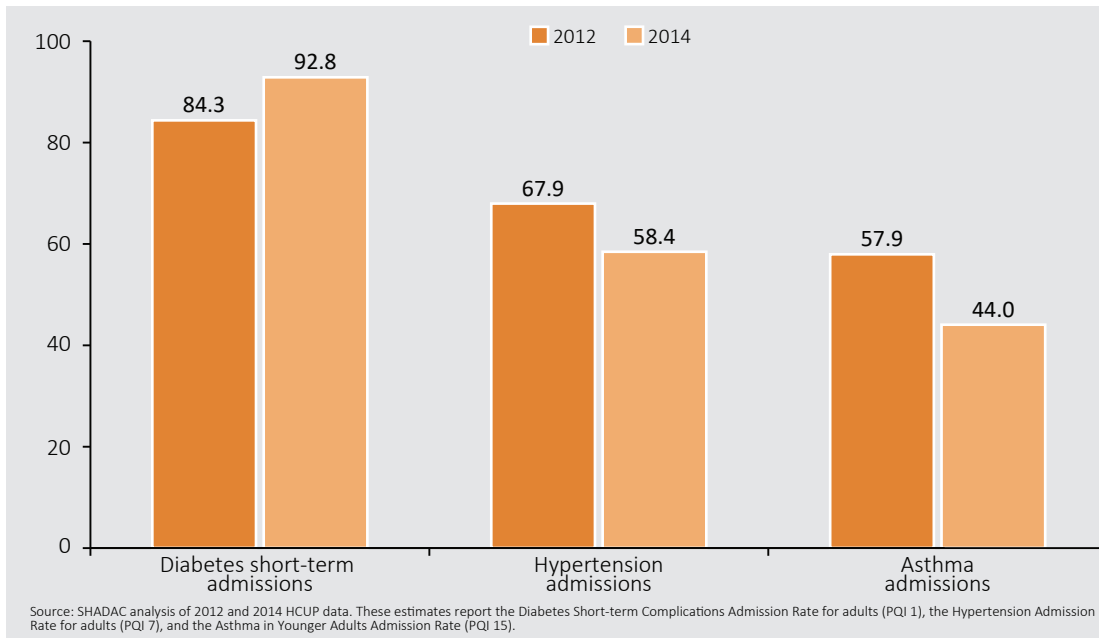


FIGURE 4.1: Diabetes (ages 18+), Hypertension (ages 18+) and Asthma (ages 18-39) Hospital Admissions (per 100,000), Kentucky 2012-2014

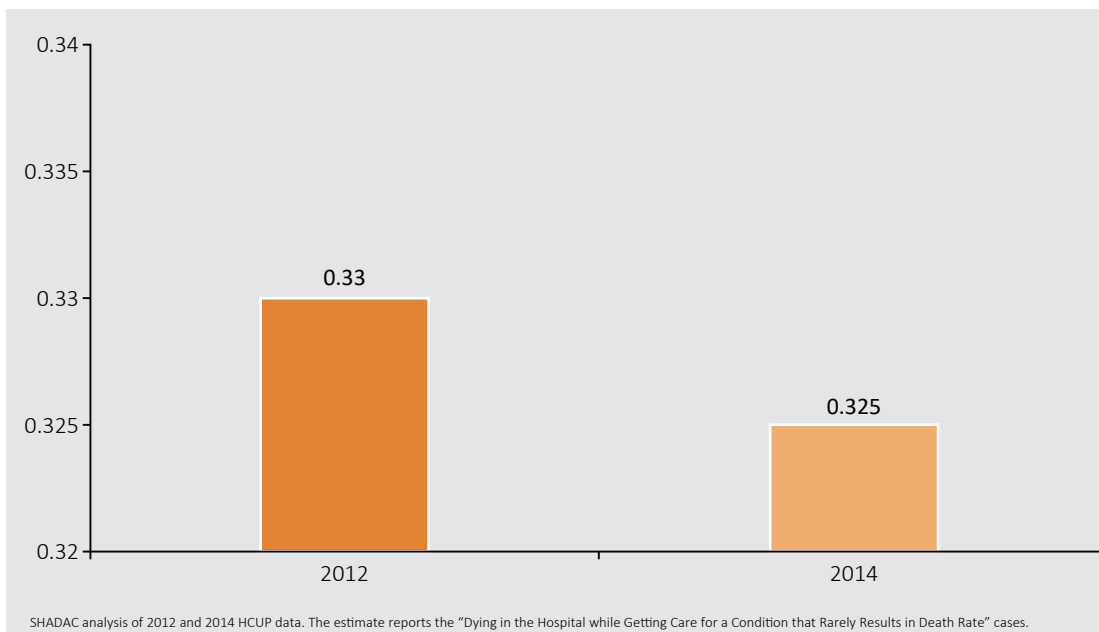


FIGURE 4.2: Mortality Rate in Low Mortality DRGs (per 1,000 cases), Kentucky, 2012-2014 (all ages)

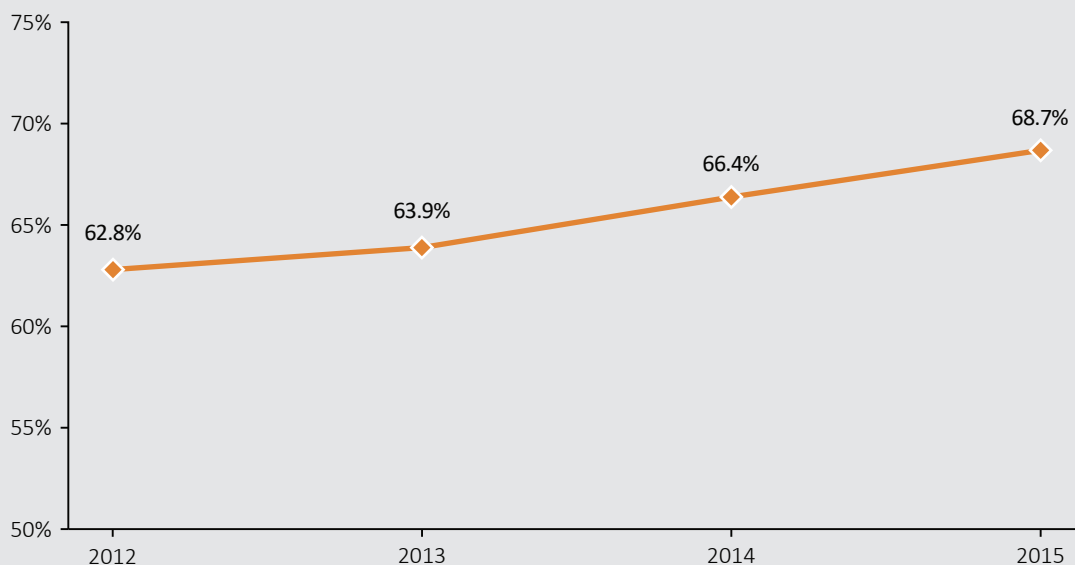
Breastfeeding Grew to More Than Two-thirds of Births

Because of the positive effects of breastfeeding on the health of the mother and baby,³⁷ 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.³⁸ The ACA also included provisions aimed at supporting mothers in efforts to breast feed, including requiring that health insurance plans cover lactation counseling and the cost of a breast pump.

Due to changes in the availability of state-level breastfeeding rates, we have revised this indicator to track the percentage of infants breast-fed upon discharge from the hospital.

Figure 4.3 shows that the percentage of Kentucky infants who were reported as being breastfed at discharge from the hospital has increased 5.9 percentage points to 68.7% in 2015. Because these data come from birth records and not a statistical sample, no significance testing was performed.

FIGURE 4.3:
Breastfeeding Initiation
Rates, Kentucky,
2012-2015
(newborn infants)



Source: Data provided by the Kentucky Department for Public Health. Note: Data are still preliminary for 2014 and 2015.

Racial Disparities Continued in 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 birth weight infants who survive are at increased risk for health problems ranging from neurodevelopmental disabilities to respiratory disorders.”³⁹ The U.S. Department of Health and Human Services has set a national target to reduce low birth weight to 7.8% of live births by 2020, (the national rate was 8.0% in 2014).⁴⁰

Although low birth weight in Kentucky has varied slightly from year to year—beginning at 8.7% in 2012, increasing to 9.0% in 2013, and dropping to 8.8% in 2014—it returned in 2015 to the same rate as 2012, of 8.7% (see Figure 4.4). Despite the relative steadiness in low birth weight, the data show consistent disparities by race/ethnicity. In 2015, non-Hispanic whites had a rate of 8.2% low birth weight. By comparison, non-Hispanic blacks had higher rate of 13.9%, while Hispanics had a lower rate of 6.5%.

The ACA included provisions that could help to address the issue of low birth weight, such as requirements for individual-market health insurance to cover pregnancy-related care, which is intended to improve access to prenatal care by making it more affordable for pregnant women. However, because prenatal care occurs over a period of several months during gestation, it’s

likely that any effects on low birth weight would lag other improvements, such as reduced uninsurance rates. Because these data come from birth records and not a statistical sample, no significance testing was performed.

Colorectal Screenings Increased, Cholesterol Awareness Stayed Stable

Preventive care utilization for adults also is important because early, lower-cost health interventions may prevent or reduce the severity of higher-cost, severe health problems. Our study tracks two examples of preventive care: *cholesterol awareness* and *colorectal cancer screening*.

The cholesterol awareness metric reports the percentage of adults (ages 18+) who had their blood cholesterol checked within the past five years. In 2015, 76.5% of Kentucky adults reported having had this test, which was not significantly different from 2013 (see Figure 4.5).

Despite the relative steadiness in low birth weight, the data show consistent disparities by race/ethnicity.

DOMAIN #4: QUALITY

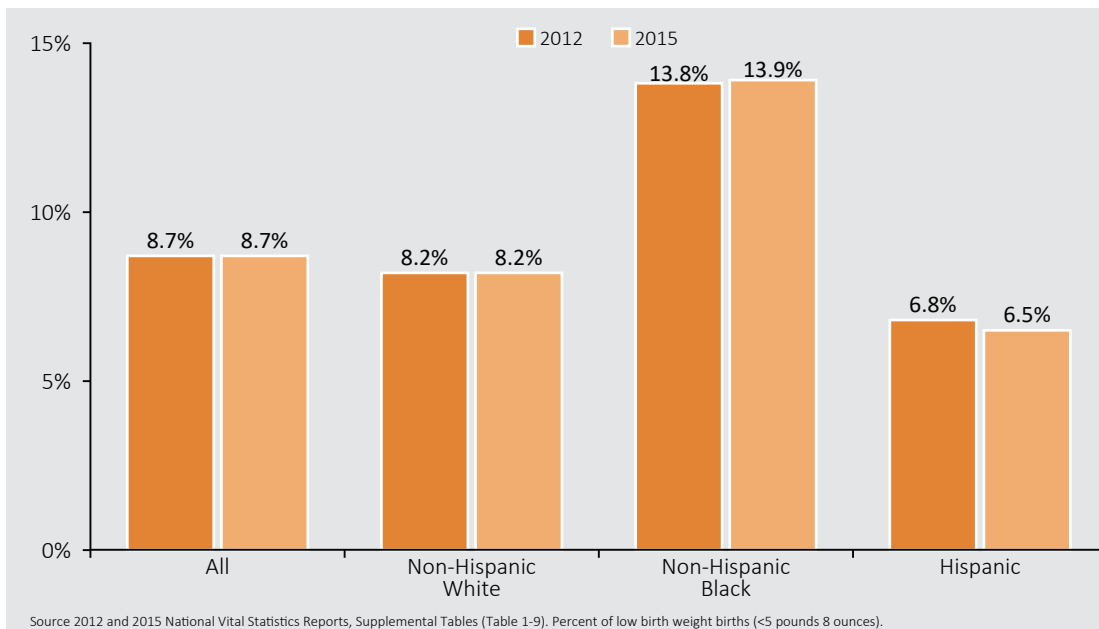


FIGURE 4.4:
Low Birth Weight for Births by Race/Ethnicity, Kentucky, 2012-2015 (all births)

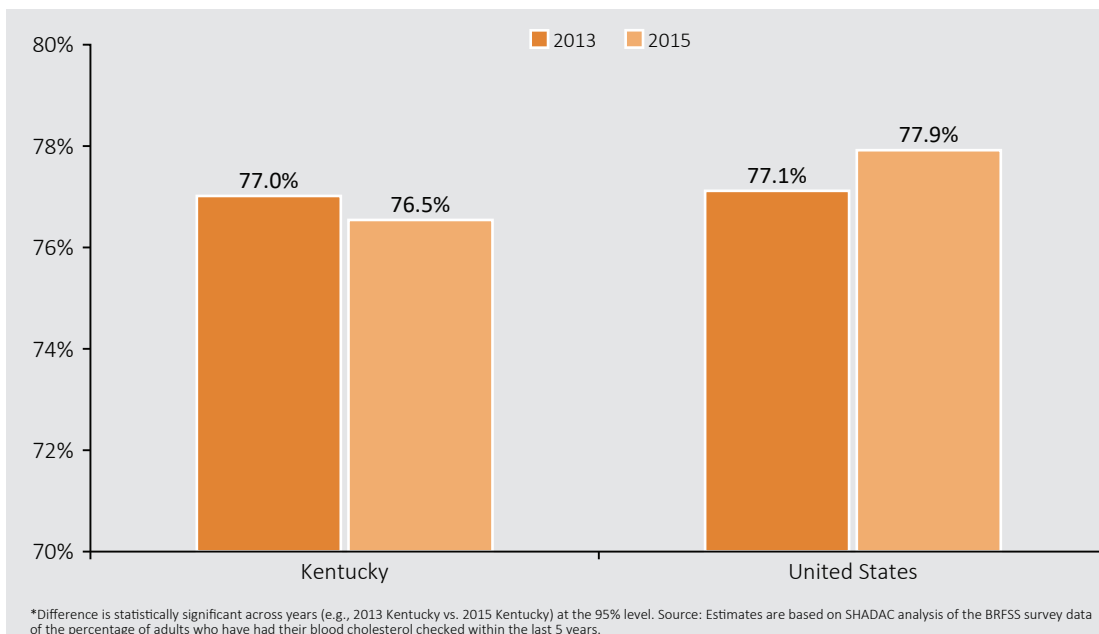


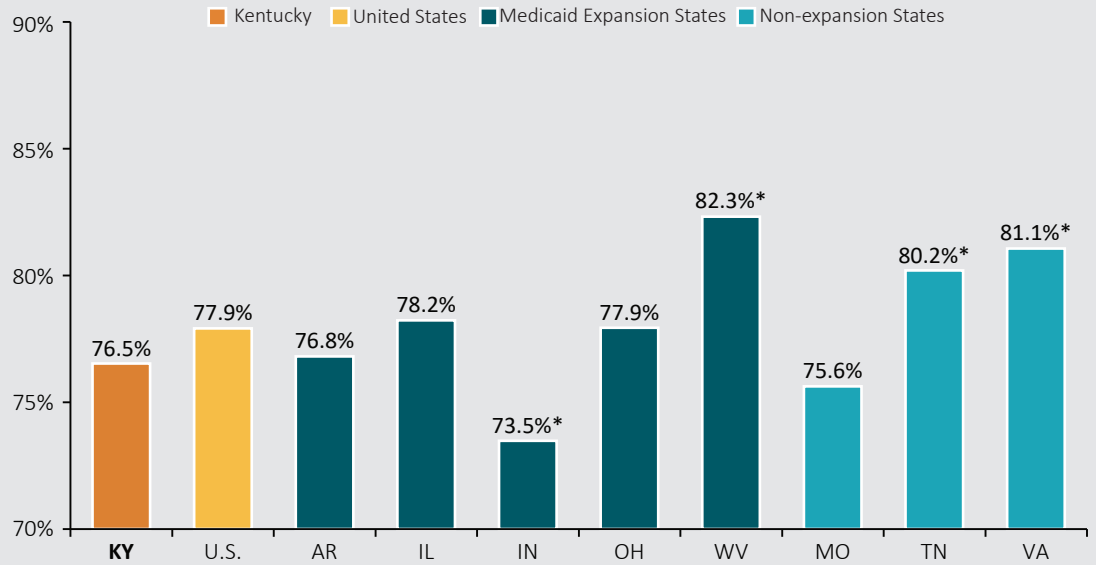
FIGURE 4.5:
Cholesterol Awareness, Kentucky and U.S., 2013-2015 (ages 18+)

Figure 4.6 shows Kentucky's performance on this indicator compared to the U.S. and comparison states. In 2015, Kentucky's rate of cholesterol awareness was not significantly different from the U.S. rate or half of our comparison states, but it was significantly higher than one (IN) and lower than three (WV, TN, VA).

Figure 4.7 shows Kentucky, the U.S. and comparison states from 2013-2015. Of these, only the U.S. and three states saw significant increases in cholesterol awareness (AR, IL, WV).

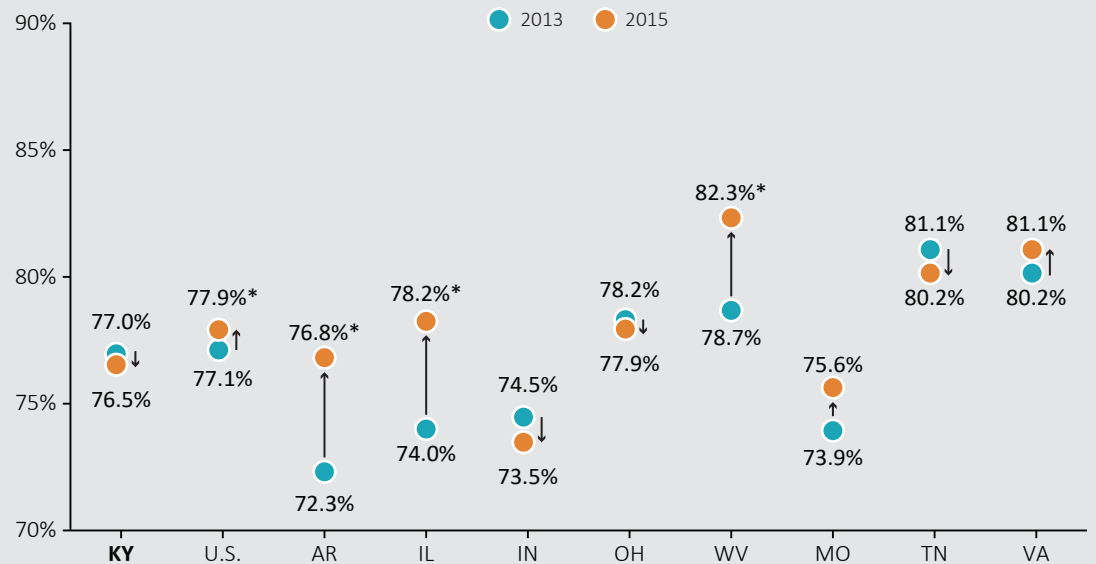
The colorectal cancer screening metric reports the percentage of adults ages 50 to 75 who have met guidelines for receiving colorectal cancer screening within certain time periods.⁴¹

FIGURE 4.6:
Cholesterol Awareness,
Kentucky Compared to
Neighboring States and
U.S. Rate, 2015 (ages 18+)



*Difference is statistically significant across states (e.g. Kentucky vs. Arkansas) at the 95% level. Source: Estimates are based on SHADAC analysis of the 2015 BRFSS survey data of the percentage of adults who have had their blood cholesterol checked within the last 5 years. Note: While Indiana is a Medicaid expansion state, the state did not expand its Medicaid program until 2015.

FIGURE 4.7:
Cholesterol Awareness,
Kentucky Compared to
Neighboring States and
U.S. Rate, 2013 & 2015
(ages 18+)



*Difference is statistically significant within the state (e.g. Arkansas 2013 estimate vs. Arkansas 2015 estimate) at the 95% level. Source: Estimates based on SHADAC analysis of the 2013 and 2015 BRFSS survey data of the percentage of adults who have had their blood cholesterol checked within the last 5 years.

In 2014, 66.8% of respondents reported having had a colorectal cancer screening, a statistically significant increase of 4.4 percentage points since 2012 (see Figure 4.8). While this increase continues a longer-term trend of improving colorectal cancer screening rates in Kentucky, other data showing increased colorectal cancer screenings in Kentucky’s Medicaid program since 2014 suggest that the Commonwealth’s ACA Medicaid expansion has also played a role.^{42,43}

In a prior report, we presented data comparing Kentucky’s performance on this indicator to the

U.S. and neighboring states, finding that only Kentucky experienced a statistically significant improvement, and that this improvement brought Kentucky on par with the U.S.⁴⁴

Unprotected Sex Among High School Students Remained Statistically Unchanged

The 2015 YRBSS provides estimates of unprotected sex (i.e., no use of any birth control) among high school students who reported that they were sexually active. This indicator was identified by the Foundation as an important part of the study’s population health and prevention measures.

DOMAIN #4: QUALITY

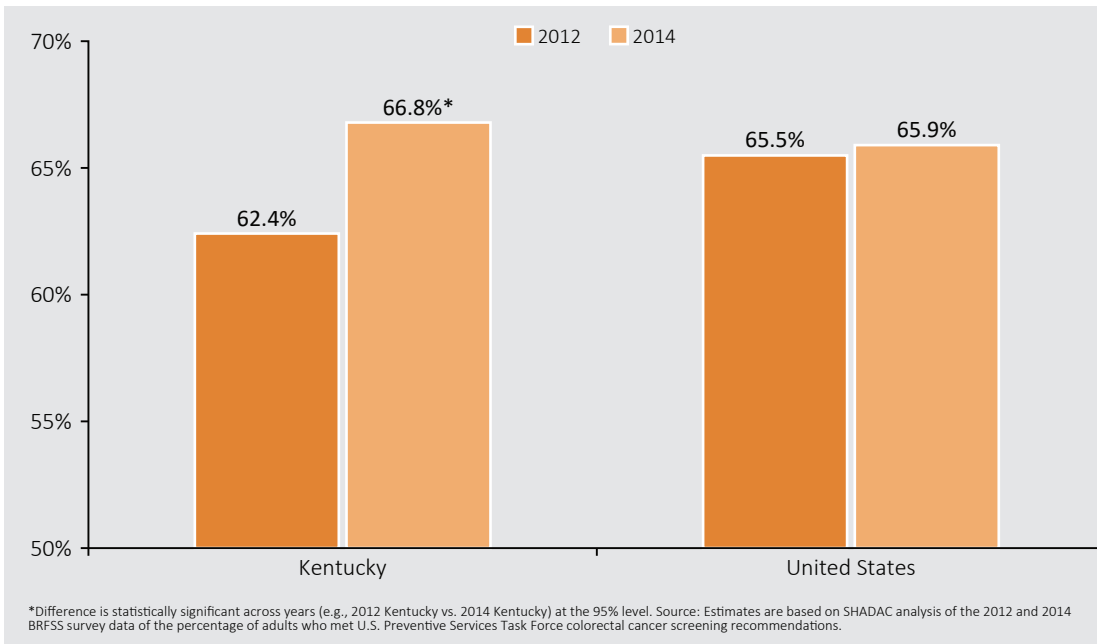


FIGURE 4.8:
Colorectal Cancer Screenings, Kentucky and U.S., 2012-2014 (ages 50-75)

Although the ACA includes certain provisions designed to increase access to contraception—such as requiring private health insurance plans to cover birth control prescribed by a health care provider with no cost-sharing—there are many factors that influence adolescents’ use of contraception,⁴⁵ so the law is not expected to have a strong effect on use of birth control by high school students.

Figure 4.9 provides a snapshot of the 2013 baseline data and updated 2015 data for Kentucky. Among high school students, 14.5% reported engaging in unprotected sex during their last sexual intercourse in 2015, which was not statistically different from 2013. Female high school students reported higher rates of unprotected sex (17.5%) compared to males (11.6%) in 2015, although neither of these were statistically different than in 2013.

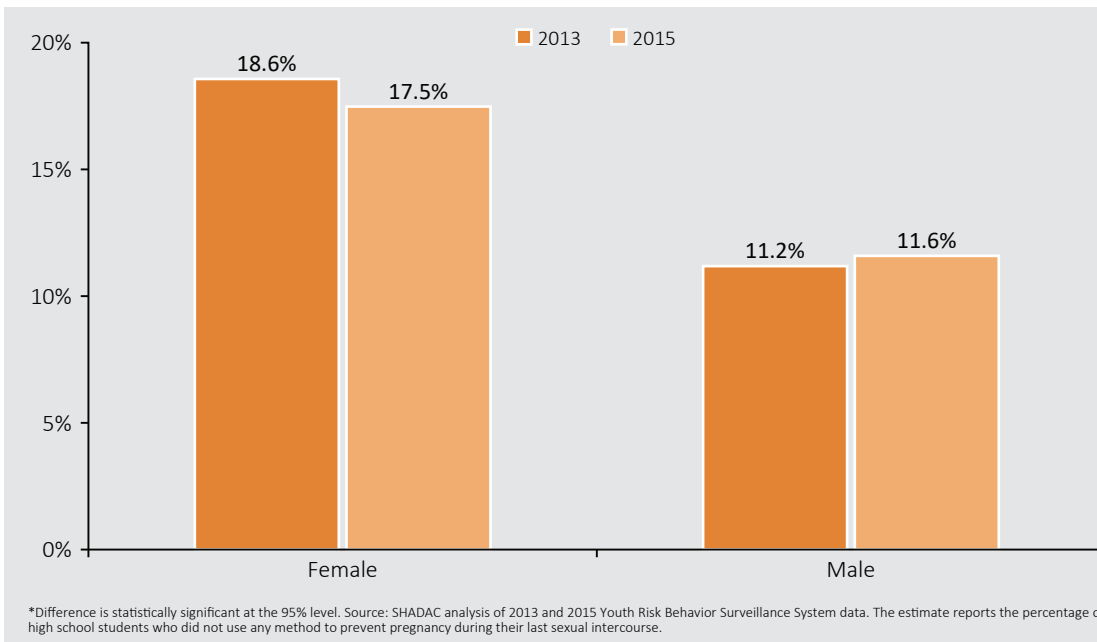


FIGURE 4.9:
Unprotected Sex Among High School Students, Kentucky, 2013-2015 (grades 9-12)

DOMAIN #5: HEALTH OUTCOMES

An ultimate goal of the improvements in the prior study domains—coverage, access, cost and quality—is improved health for Kentucky’s population. Health outcomes are determined by a combination of factors including genetics, behaviors, environmental exposures, social factors and health care services and policies.⁴⁶ Although these determinants are complex, the outcome measures included in this report are at least partially influenced by access to high quality care. While health outcomes are slow to change at a state or national level, monitoring them is key to understanding the impacts of efforts to improve health in Kentucky.

In this study, we use five measures of health outcomes: obesity rates, cigarette use, self-reported health status, prevalence of chronic disease and premature death. These measures are based on data from the BRFSS, YRBSS and CDC vital statistics.

Our analysis of early impacts of the ACA on health outcomes did not find large changes. For example, although adult cigarette smoking rates declined, adolescent rates remained stable; and while adult obesity rates increased, adolescent rates again remained stable. Overall, indicators remained mostly unchanged since 2012.

HEALTH OUTCOMES MEASURES

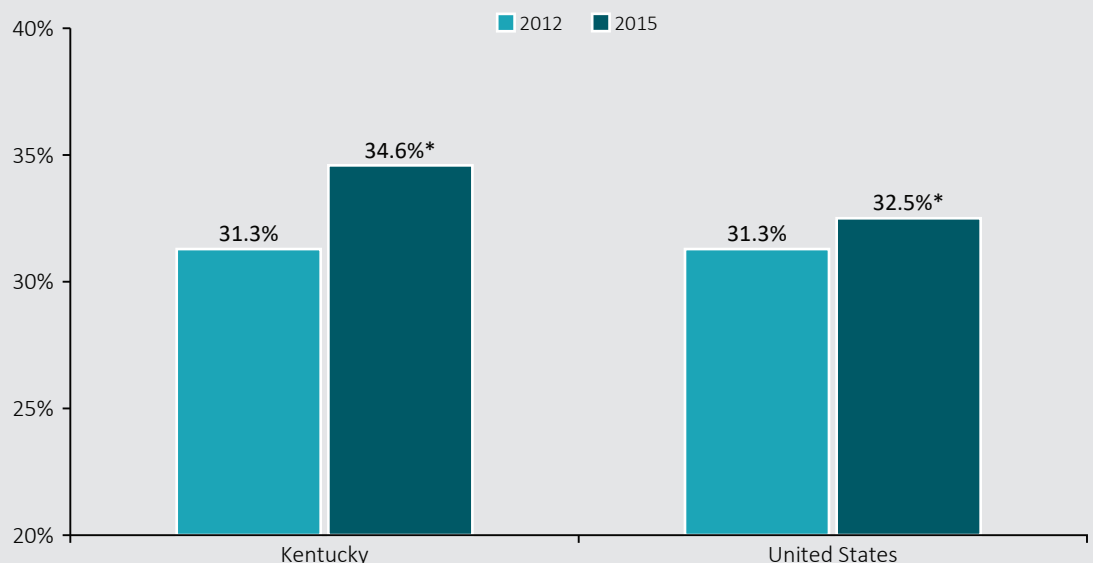
Adult Obesity Grew Significantly, Adolescent Stable

Obesity is associated with a range of chronic conditions, including heart disease, high blood pressure, and diabetes.⁴⁷ Obesity is prevalent among adults and children in the U.S., though rates among children have stabilized in recent years.⁴⁸

Figure 5.1 shows estimates of the *prevalence of obesity* among adult Kentuckians (ages 18+) from 2012-2015. During this time period, obesity among adult Kentuckians increased a statistically significant 3.3 percentage points, to 34.6% in 2015. Figure 5.2 shows obesity among adolescent Kentuckians. Kentucky’s adolescent obesity rate of

18.5% in 2015 was not significantly different from 2013 (the baseline year for this measure, since 2012 data weren’t available); however, this could be due in part to a shorter comparison timeframe (i.e., using 2013 rather than 2012 data). Despite the ACA’s aims to improve people’s health, it is not unexpected that Kentucky’s obesity rates would remain stable or increase since implementation of the law. While access to health care services may serve an important role in stopping and reversing the rise of obesity in Kentucky, it is a complex problem that has taken decades to reach today’s levels of prevalence,⁴⁹ and halting or reversing that trend may take years.

FIGURE 5.1:
Self-Reported Obesity,
Kentucky and U.S.,
2012-2015 (ages 18+)



*Difference is statistically significant across years (e.g., 2012 Kentucky vs. 2015 Kentucky) at the 95% level. Source: The Kentucky estimates are based on SHADAC analysis of 2012 and 2015 BRFSS survey data. The estimates report the percentage of adults with a Body Mass Index of over 30.

DOMAIN #5: HEALTH OUTCOMES

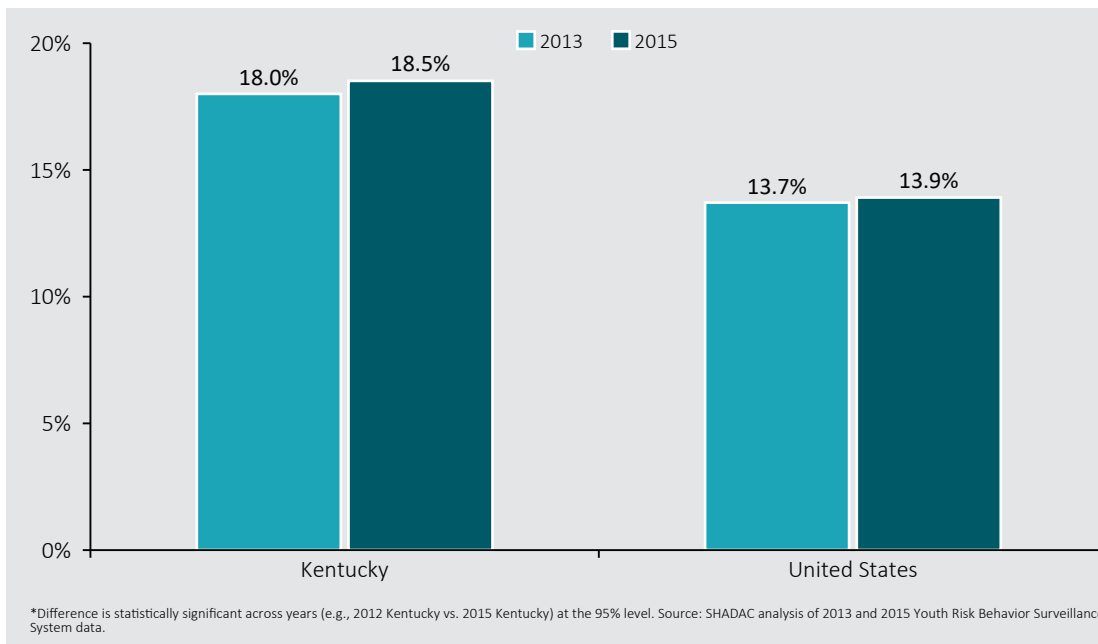


FIGURE 5.2: Self-Reported Obesity, Kentucky and U.S., 2013-2015 (high school students, grades 9-12)

Adult Cigarette Use Declined, Adolescent Stable

According to the CDC, smoking is associated with numerous conditions, including cancer, heart disease, and birth defects, and it causes nearly one in five deaths in the U.S. each year.⁵⁰ Kentuckians are particularly at risk because of the Commonwealth's high smoking rates. In 2015, Kentucky had the highest adult smoking rate in the U.S.,⁵¹ and the second-highest adolescent smoking rate, after West Virginia.⁵² The ACA incorporated certain policies to discourage tobacco use and to provide people resources to quit. For example,

the law allows insurers to charge higher premiums to people who use tobacco, and it also requires health insurance to cover certain recommended preventive health care services, including tobacco-cessation benefits, with no cost-sharing.⁵³

Figure 5.3 shows estimates of the prevalence of cigarette use among adults in Kentucky. Since 2012, Kentucky's adult smoking rate declined a statistically significant 2.3 percentage points, to 26.0% in 2015.

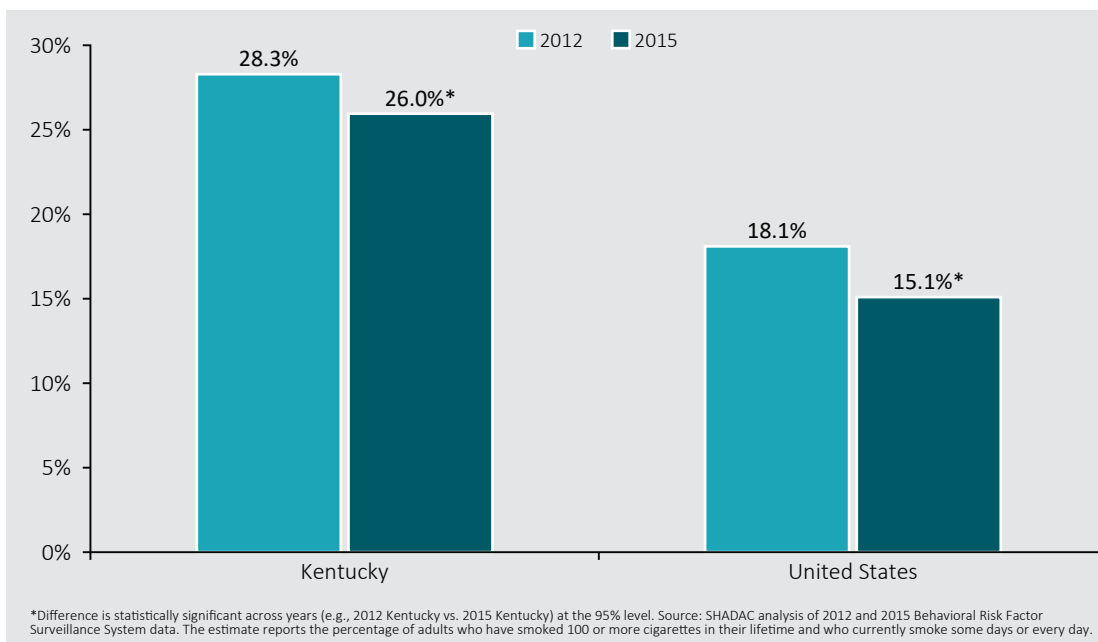


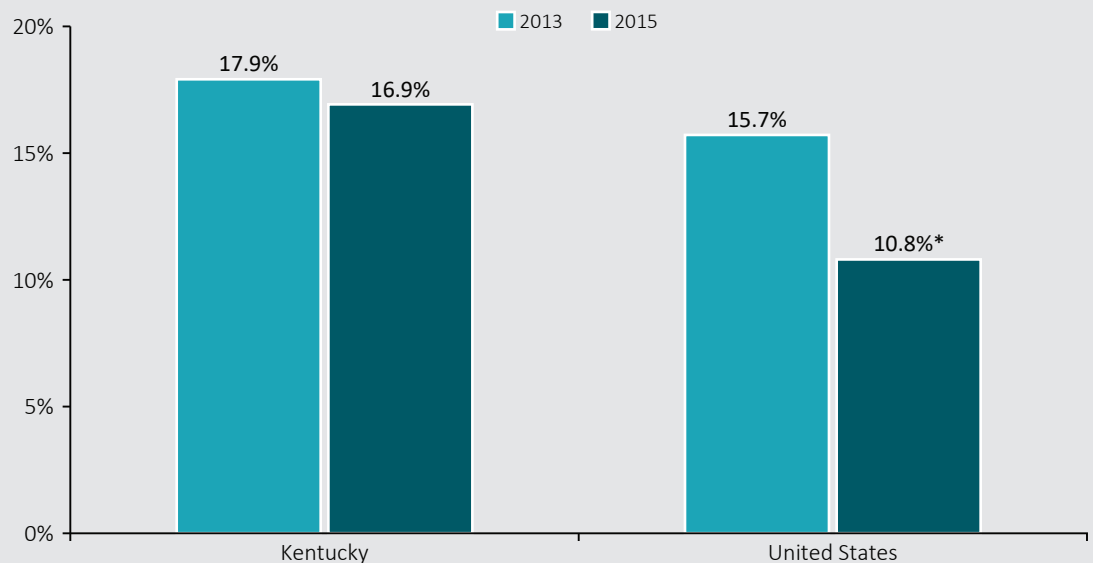
FIGURE 5.3: Cigarette Use, Kentucky and the U.S., 2012-2015, (ages 18+)

Figure 5.4 shows cigarette use among Kentucky adolescents. Between 2013 and 2015, Kentucky’s adolescent smoking rate remained statistically unchanged, at 16.9% in 2015; however, like the obesity indicator, this could be due in part to a shorter comparison timeframe (i.e., using 2013 rather than 2012 data). While it may be that the ACA’s tobacco policies played a role in reduced cigarette use among Kentucky adults, it is important to consider other circumstances that could also have contributed, such as the rise of electronic cigarettes. The 2016 KHIP found that 25% of adult Kentuckians have used electronic cigarettes,⁵⁴ and other national research has found that use of e-cigarettes has risen during the past several years, and this may be contributing to declines in rates of cigarette smoking.^{55,56}

To better understand the role of the ACA on tobacco use in Kentucky, additional research may be needed into the reasons people quit smoking, and if people are quitting tobacco altogether or switching from cigarettes to e-cigarettes.

To better understand the role of the ACA on tobacco use in Kentucky, additional research may be needed into use of e-cigarettes.

FIGURE 5.4:
Cigarette Use, Kentucky and the U.S., 2013-2015, (high school students, grades 9-12)



*Difference is statistically significant across years (e.g., 2012 Kentucky vs. 2015 Kentucky) at the 95% level. Source: SHADAC analysis of 2013 and 2015 Youth Risk Behavior Surveillance System data. The estimate reports the percentage of high school students who currently smoked cigarettes, on at least 1 day during the 30 days before the survey.

Nearly 1 in 4 Kentucky Adults Report Fair or Poor Health

Research has consistently shown *self-reported health status* from surveys to be a valid predictor of mortality.⁵⁷ The BRFSS survey asks, “Would you say that in general your health is excellent, very good, good, fair, or poor?” In 2015, 22.2% of adults surveyed in Kentucky reported poor or fair health, which was not significantly different from 2012.

We also compare Kentucky’s self-reported health status to the U.S. and neighboring states, presented in Figure 5.5. In 2015, the percentage of Kentucky adults reporting poor or fair health was significantly higher than the U.S. rate of 17.5%. Kentucky’s rate of poor or fair health also was higher than most comparison states (IL, IN, OH, MO, VA); only West Virginia had a significantly higher rate of poor or fair health than Kentucky (see Figure 5.6).

DOMAIN #5: HEALTH OUTCOMES

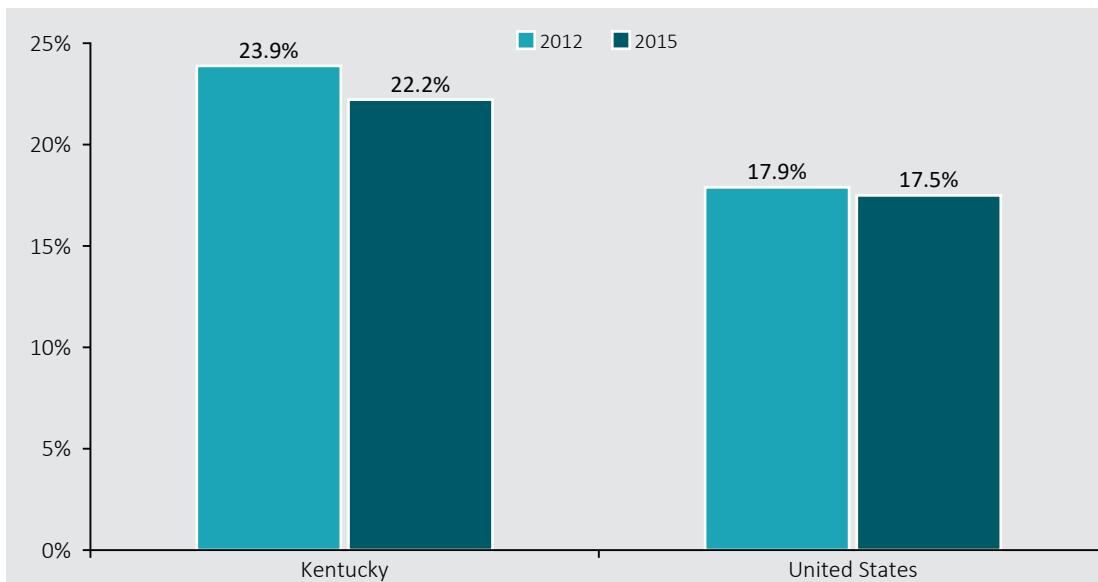


FIGURE 5.5:
Poor/Fair Health,
Kentucky and the U.S.,
2012-2015 (ages 18+)

*Difference is statistically significant across years (e.g., 2012 Kentucky vs. 2015 Kentucky) at the 95% level. Source: SHADAC analysis of 2012 and 2015 Behavioral Risk Factor Surveillance System data. The estimate reports the percentage of adults who report being in poor or fair health.

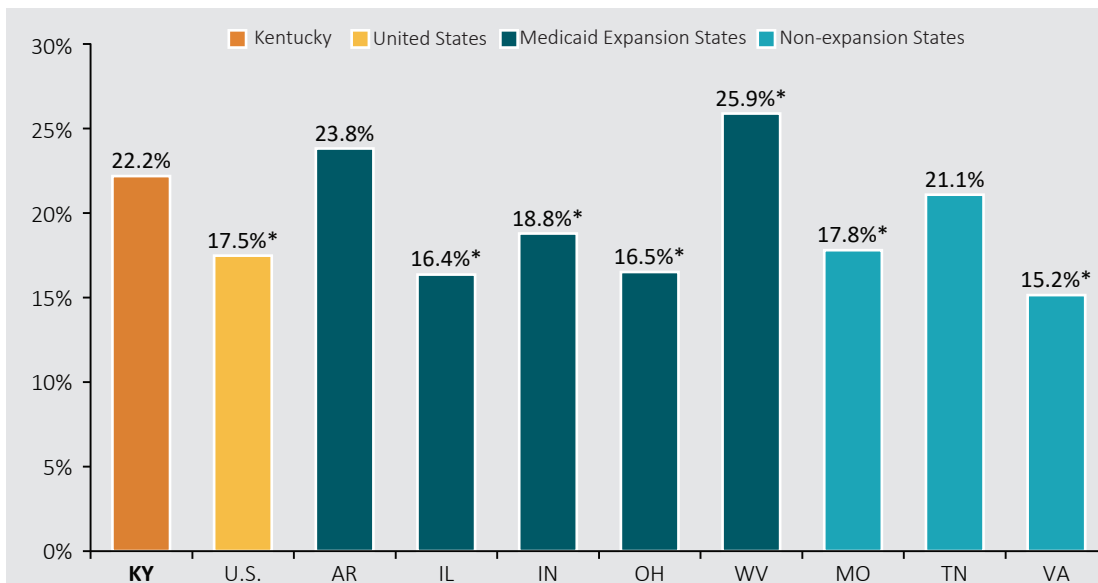


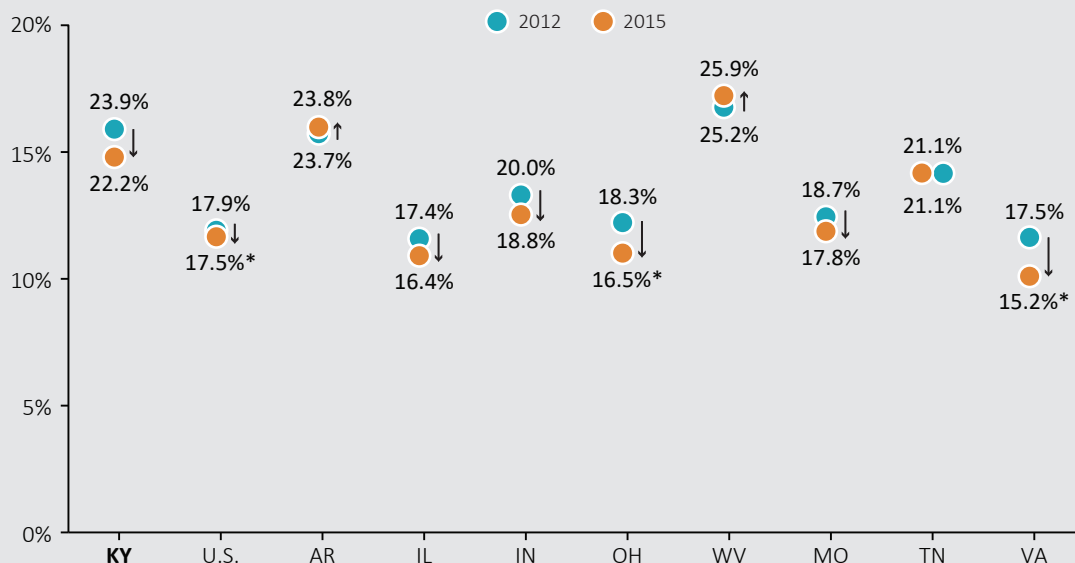
FIGURE 5.6:
Poor/Fair Health,
Kentucky Compared to
Neighboring States and
U.S. Rate, 2015 (ages 18+)

*Difference is statistically significant across states (e.g., Kentucky vs. Arkansas) at the 95% level. Source: SHADAC analysis of 2012 and 2015 Behavioral Risk Factor Surveillance System data. The estimate reports the percentage of adults who report being in poor or fair health.

Figure 5.7 shows the rates of poor or fair health in 2012 and 2015 for Kentucky, the U.S. and comparison states. Although the U.S. experienced a relatively small but statistically significant 0.4 percentage point decline in poor or fair health, only two of eight comparison states saw significant declines (OH and VA).

The stability of Kentucky's rate of poor or fair health—and those of most of its neighbors—suggests that the ACA's coverage expansions have not yet driven significant improvements in overall health status; however, changes in individuals' overall health could take years to develop, so this should be a key measure for future research into the impacts of the ACA.

FIGURE 5.7:
Poor/Fair Health,
Kentucky Compared to
Neighboring States and
U.S. Rate, 2012-2015
(ages 18+)



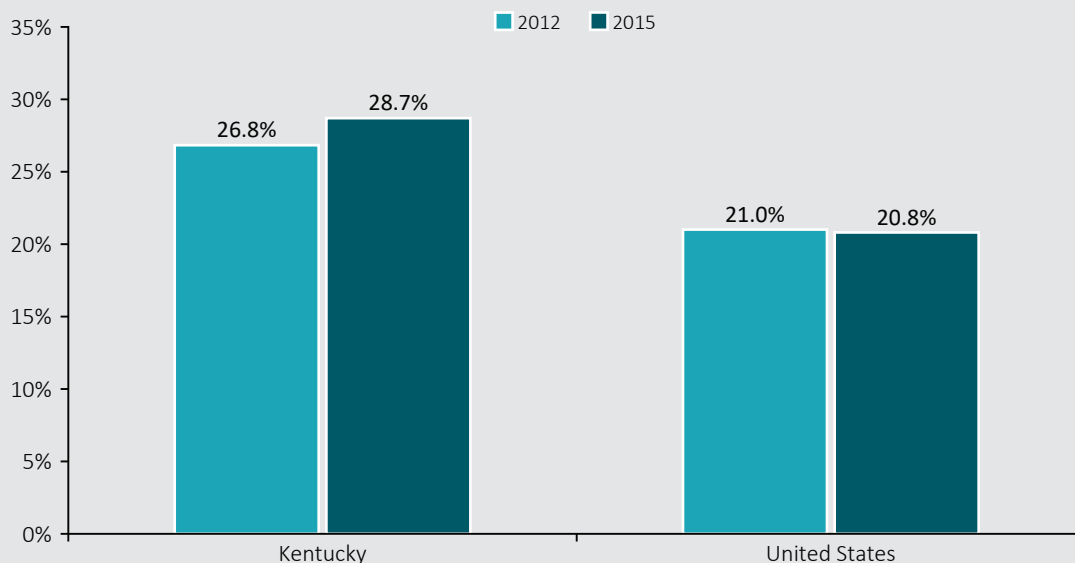
*Difference is statistically significant within the state (e.g. Arkansas 2012 estimate vs. Arkansas 2015 estimate) at the 95% level. Source: SHADAC analysis of 2012 and 2015 Behavioral Risk Factor Surveillance System data. The estimate reports the percentage of adults who report being in poor or fair health.

**More than 1 in 4 Kentucky
Adults Reported Chronic Conditions**

Chronic diseases result in large cost and social burdens. The CDC estimates that chronic conditions are the cause of seven 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.⁵⁸ 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 5.8 shows that in 2015, 28.7% of adults in

Kentucky reported having one or more of these conditions, which was not significantly different from 2012. However, in an earlier report, we found that the 2014 rate of 29.1% was significantly higher than the 2012 rate of 26.8%.⁵⁹ Because the difference between 2014 and 2015 was not statistically significant, this may be due to the inherent level of uncertainty in survey estimates. When they become available, 2016 estimates may help to clarify whether self-reported prevalence of chronic disease has increased significantly since implementation of the ACA.

FIGURE 5.8:
Chronic Disease
Prevalence, Kentucky and
the U.S., 2012-2015
(ages 18+)



*Difference is statistically significant across years (e.g., 2012 Kentucky vs. 2015 Kentucky) at the 95% level. Source: The Kentucky estimates are based on SHADAC analysis of 2012 and 2015 BRFSS survey data. The 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.

DOMAIN #5: HEALTH OUTCOMES

Although the ACA aimed to eventually improve the health of Americans by expanding access to health care, improvements in health outcomes would likely take years. It would not necessarily be surprising for self-reported rates of chronic disease to increase in the years soon after implementation of the ACA, as more people gain health insurance and may learn of previously undiagnosed health conditions. For example, a person who was uninsured in 2013 could have learned he was diabetic in 2014 after obtaining health insurance and visiting a health care provider.

Early Death Remained Relatively Stable in Kentucky, But Higher Than U.S.

This study also uses a measure of premature death (defined in this study as before age 75), sometimes called the *Years of Potential Life Lost* (YPLL), which is calculated from vital statistics data. The National Center for Health Statistics (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.”⁶⁰

In other words, if life expectancy is 75 years, and a person dies at age 50, she loses 25 potential years. By adding all the years of life lost to early death, we estimate the number of YPLL for Kentucky.

In 2015, there were a total of 9,206 YPLL due to premature death per 100,000 people in Kentucky, slightly higher than the rate of 8,865 in 2012 (see Figure 5.9). During that same time period, the U.S. rate of YPLL also increased, from 6,407 to 6,583. Although the increases in YPLL were similar for Kentucky and the U.S. (3.8% and 2.7%, respectively), Kentucky’s rate remained more than a third higher than the U.S. (39.8% higher in 2015). Because these data come from death records and not a statistical sample, no significance testing was performed.

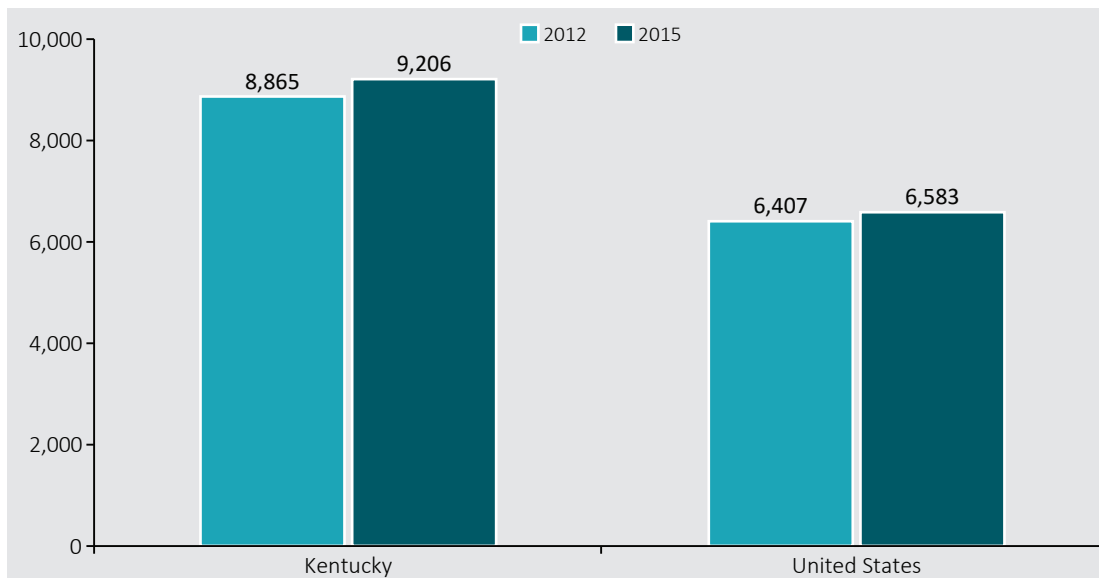


FIGURE 5.9:
Years of Potential Life Lost Due to Premature Deaths, Kentucky and the U.S., 2012-2015 (ages 75 and younger)

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

Discussion

Since implementation of the ACA, Kentucky has seen broad improvements in measures of health coverage. The Commonwealth's uninsurance rate has dropped by more than half, and coverage through the individual market and Medicaid/CHIP have increased significantly. In 2015, Kentucky's uninsurance rate was lower than the U.S. and six of eight neighboring states. However, Kentucky continues to experience disparities in health insurance coverage. The Hispanic/Latino population's uninsurance rate is nearly four times the overall rate, the young adult uninsurance rate is nearly double the overall rate, and the low-income population is about 1.5 times the overall rate. However, the share of Kentuckians who are underinsured—spending 10% or more of their family income on health expenses—remained steady at nearly one in four Kentuckians. While fewer small employers offer coverage since implementation of the ACA, the share of Kentucky's population with employer-sponsored insurance has remained stable, likely because large firms continue to offer health insurance.

Kentucky also has begun to experience some improvements in access to health care. More Kentuckians report having a usual place where they go for health care, as well as more reporting that they have visited a health care provider in the past year. Since 2012, elderly Kentuckians are also less likely to report making changes to their medications due to cost, likely a result of the ACA's provisions to gradually close the Medicare Part D “doughnut hole.” Over nine in ten Kentuckians continue to report they can find a doctor when they need one and that they can find a doctor who takes their insurance. Kentuckians continue to report using the Emergency Department (ED) in rates similar to before the ACA. Although the Commonwealth's rate of ED use is higher than the U.S., it is no longer significantly higher than most of its neighboring states. Additionally, some gaps in access have continued. For example, more than one in ten young adult Kentuckians have an unmet need for treatment of alcohol abuse, and nearly four in ten Kentucky adults haven't seen a dentist in the past year.

The Commonwealth has seen improvements in most of the measures of cost that we have tracked through our study. Fewer Kentuckians report trouble paying medical bills compared to before the ACA. While the U.S. also experienced a decline in trouble paying medical bills, only one other neighboring state (Ohio) also saw a decline. Additionally, fewer Kentuckians say they have delayed or gone without needed medical care due to the cost. Hospitals also have seen reductions in costs

for charity care and self-pay charges for patients without insurance. Despite these improvements, though, evidence suggests that premiums for employer-sponsored insurance have continued their pre-ACA increases, and median out-of-pocket spending for Kentuckians has remained steady rather than declining.

The potential impacts of the ACA on health care quality in Kentucky have been less clear. While newborn breastfeeding and colorectal cancer screening rates have increased since implementation of the law, the prevalence of low birth weight infants and cholesterol awareness rates, and unprotected sex among high school students have remained largely unchanged. Additionally, measures of preventable health complications have been mixed, with death rates for low-risk hospitalizations remaining relatively steady, while admissions for diabetes short-term complications increased, and admissions for hypertension and asthma decreased.

Our study did not find clear improvements in health outcomes during these early years since implementation of the ACA in Kentucky. Obesity rates for adult Kentuckians continued to climb, although adolescent rates stayed steady. Cigarette smoking rates for adolescents remained stable while adult rates declined; however, whether the ACA played a large role in the decline among adults—or whether that was driven by other factors, such as the rise of e-cigarettes—remains uncertain. The share of Kentucky adults reporting poor or fair health remained stable at more than one in five, and the share reporting a chronic disease also stayed stable at more than one in four. Compared to the U.S., Kentucky continues to have a higher rate of poor or fair health, and only one other neighboring state (West Virginia) had a higher rate in 2015. Additionally, years of life lost due to premature death remains higher than the U.S.

Overall, our analysis of these indicators suggests that the ACA has improved health insurance coverage in Kentucky, and it may have played a role in improving some measures of access to health care. The Commonwealth has also experienced significant improvements in reducing the financial strain of health care on families and reduced the role of cost as a barrier to care. However, disparities and gaps remain in these three domains. Any effects of the ACA on quality and health outcomes remain uncertain based on early data from the first years of implementation of the law in Kentucky. Future study is needed into health quality and outcomes to better understand whether and to what extent the ACA has impacted these domains.

III. STUDY FINDINGS: MEDICAID ENROLLMENT AND SERVICES

One of the Affordable Care Act’s key provisions to increase health insurance coverage was the law’s expansion of Medicaid eligibility to adults with incomes up to 138% of Federal Poverty Guidelines (FPG). Although the law was intended to expand Medicaid throughout the U.S., a 2012 ruling by the U.S. Supreme Court effectively made the ACA’s Medicaid expansion optional for states. Since then, 31 states and the District of Columbia have expanded their Medicaid programs, including Kentucky, which expanded under executive authority of then-Governor Steve Beshear in 2014.

Using data provided by the Kentucky Cabinet for Health and Family Services, this section of our report examines enrollment of non-elderly adults in Kentucky’s Medicaid expansion and in the Commonwealth’s traditional income-based Medicaid program. Additionally, this chapter examines utilization of selected health care services by non-elderly adults enrolled in traditional and expanded Medicaid programs.

MEDICAID ENROLLMENT

Enrollment Increased In Expansion and Traditional Medicaid

From the first quarter of Medicaid expansion in Kentucky to Quarter 3 of 2016, enrollment of non-elderly adults (ages 19-64) in Medicaid increased by 72.7%, from 376,956 to 650,867 (see Figure 6.1). With the exception of one drop in Quarter 3 of 2015, enrollment has increased each quarter since Kentucky expanded its Medicaid program. Enrollment grew to a greater extent in the Medicaid expansion than in traditional Medicaid. Between Quarter 1 of 2014 and Quarter 3 of 2016, enrollment in Medicaid expansion nearly doubled, from 260,535 to 506,317, while enrollment in traditional Medicaid increased a more-modest 24.2%, from 116,421 to 144,550. The larger growth in Medicaid expansion reflects the fact that this was a new eligibility group that

included people who were likely ineligible to enroll in Medicaid before 2014.

In comparison, the traditional Medicaid group was an established Medicaid eligibility category before the ACA, so most of this growth was likely the result of increased awareness of the program, commonly known as the “welcome mat” effect.⁶¹

By Quarter 3 of 2016, more than 500,000 Kentuckians were enrolled in Medicaid expansion.

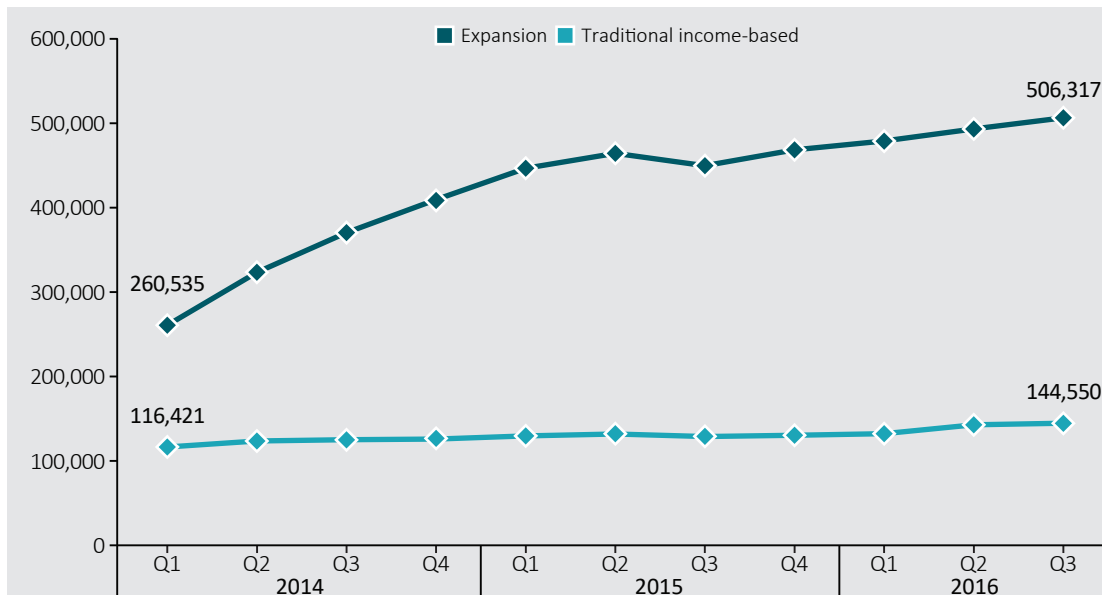


FIGURE 6.1: Quarterly Medicaid Enrollment, 2014-2016

Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS). Services are based on claims data with dates of service from 1/1/14-9/30/16.

Enrollment Largely Reflected Regional Population Levels

The Commonwealth's Medicaid expansion shows a statewide reach, with approximately one-third

of enrollment in Greater Lexington and Greater Louisville, and two-thirds of enrollment in Eastern, Western and Northern Kentucky (see Figures 6.2, 6.4 and 6.5).

FIGURE 6.2:
Kentucky Regions

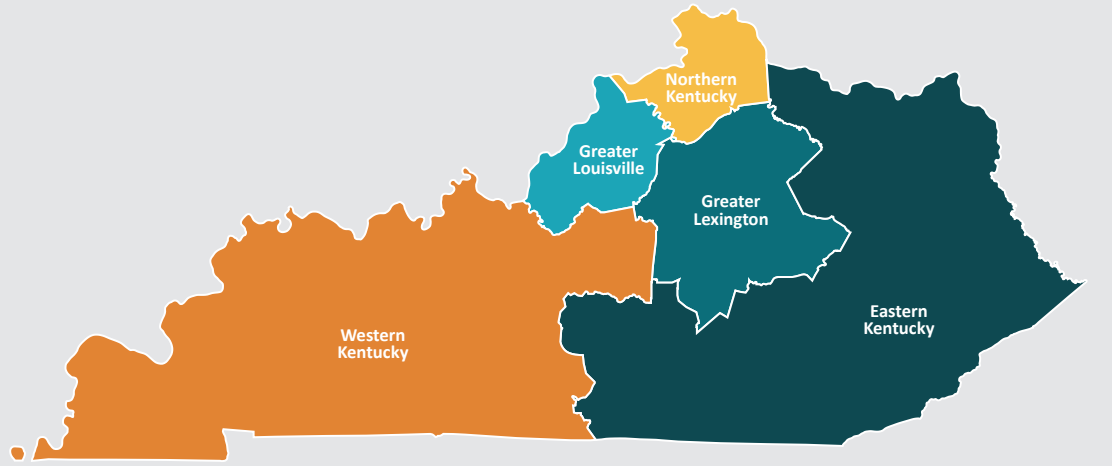
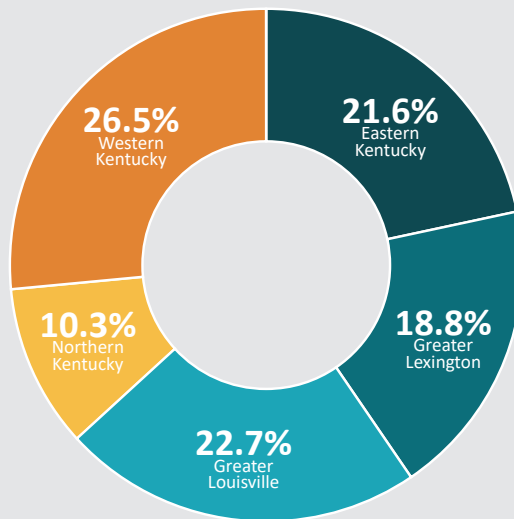
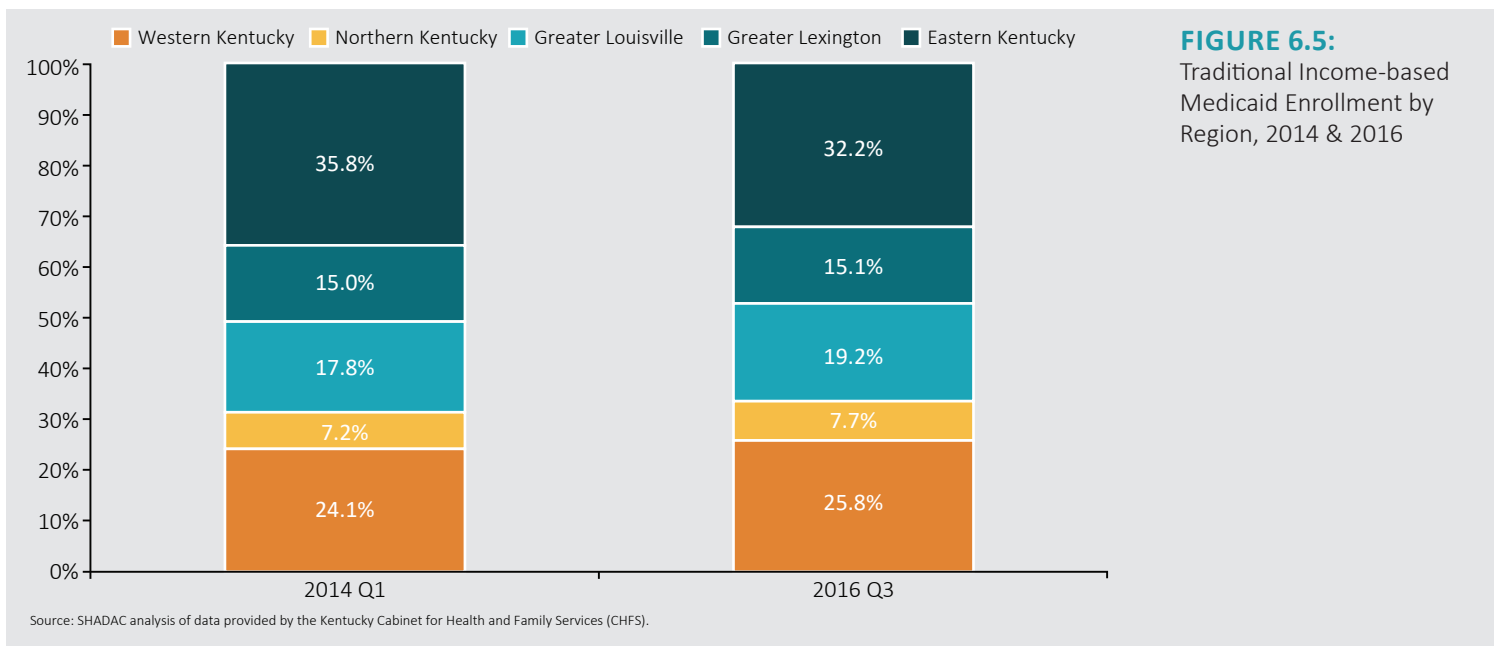
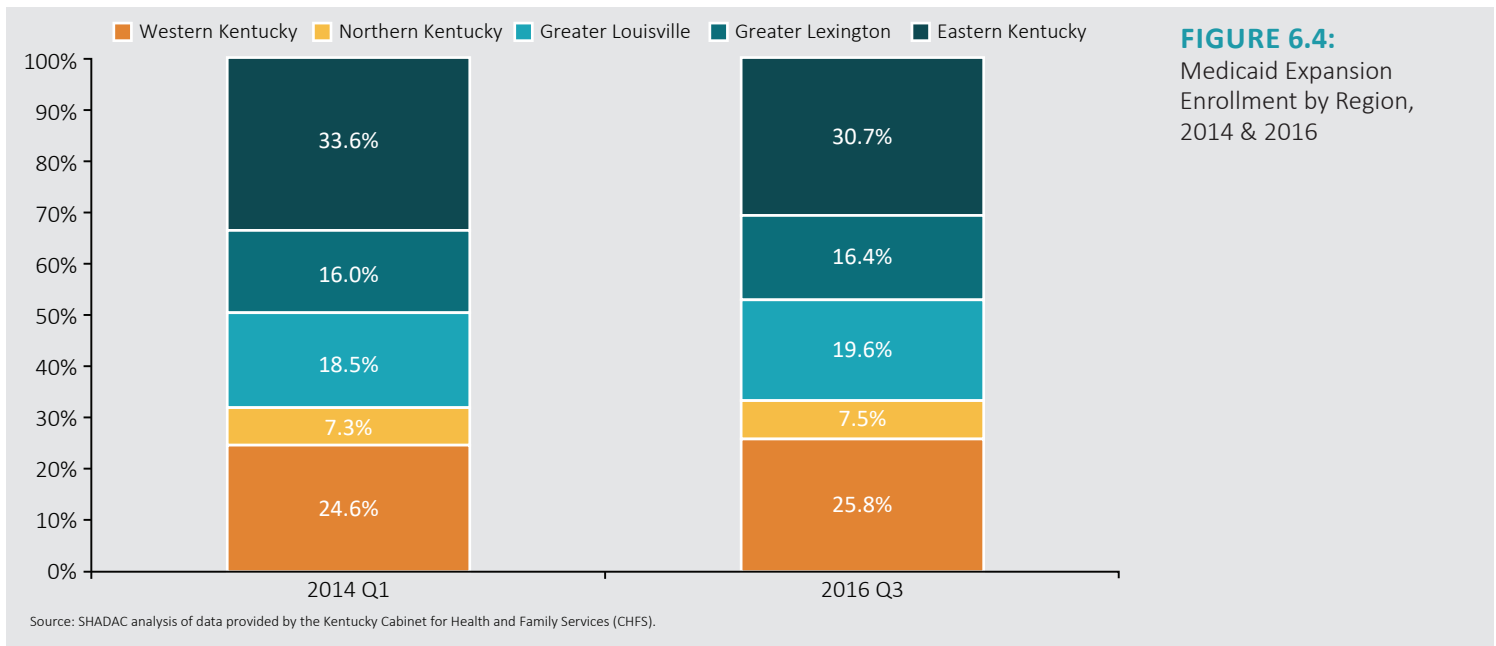


FIGURE 6.3:
Kentucky Regional Populations of Non-elderly Adults, 2015



Source: SHADAC analysis of American Community Survey data.

Enrollment proportions across regions were similar in both Medicaid expansion and traditional Medicaid, with Eastern Kentucky accounting for the largest share of enrollment for both enrollment categories (see Figures 6.4 and 6.5). Those enrollment ratios equate roughly to the Commonwealth's regional populations of non-elderly adults, although with somewhat higher enrollment for Eastern Kentucky (see Figure 6.3). Between Quarter 1 of 2014 and Quarter 3 of 2016, regional enrollment remained relatively consistent.



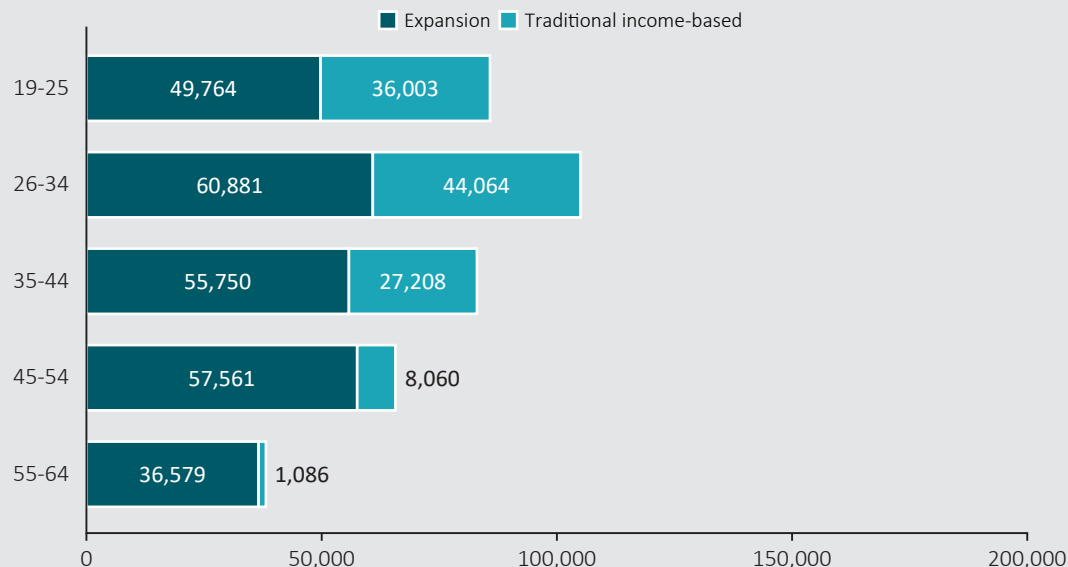
Younger Adults Lead Medicaid Enrollment

Enrollment in the Kentucky's Medicaid program also varies by age, with adults ages 26-34 representing the largest group (104,945 enrollees) in Quarter 1 of 2014, followed by young adults ages 19-25 (85,767 enrollees), ages 35-44 (82,958 enrollees), ages 45-54 (65,621 enrollees) and ages 55-64 (37,665 enrollees) (see Figure 6.6). While enrollment has increased, the age distribution of beneficiaries has remained relatively consistent through Quarter 3 of 2016 (see Figure 6.7).

While Medicaid expansion represents the largest share of enrollees for each group, the size of enrollment in traditional Medicaid varies by age. For example, in Quarter 3 of 2016 traditional Medicaid accounted for 26.4% of Medicaid enrollees ages 19-25 but only 2.3% of Medicaid enrollees ages 55-64. The lower enrollment of older adults in traditional Medicaid is likely because this category of Medicaid covers largely low-income parents and pregnant women, who are more likely to be younger.

FIGURE 6.6:

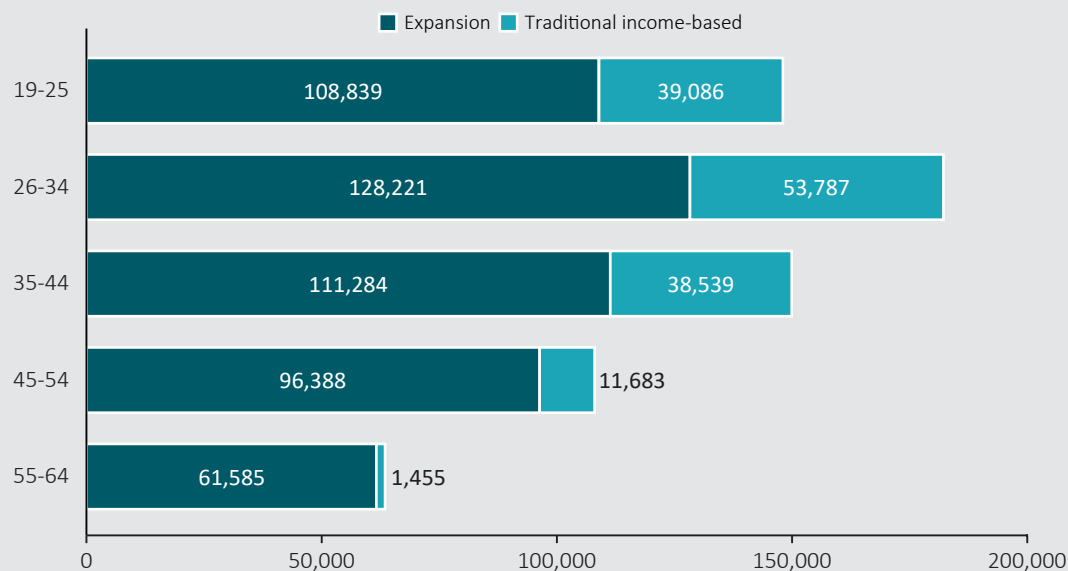
Total Enrollment by Age,
Quarter 1 of 2014



Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS).

FIGURE 6.7:

Total Enrollment by Age,
Quarter 3 of 2016



Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS).

SERVICES

Number of Colorectal Screenings Increased With Medicaid Expansion

Early in Kentucky's Medicaid expansion, the Commonwealth saw a large increase in colorectal cancer screening services, increasing from 3,762 to 6,458 (71.7%) between Quarter 1 and Quarter 2 of 2014 (see Figure 6.8).

However, despite quarter-to-quarter fluctuations, colorectal cancer screenings have remained relatively steady since that initial increase.

Most of these screenings are provided to Medicaid expansion enrollees. That is consistent with the fact that colorectal cancer screening guidelines recommend that most people begin screening at age 50,⁶² and most beneficiaries of that age are enrolled in expansion rather than traditional Medicaid.

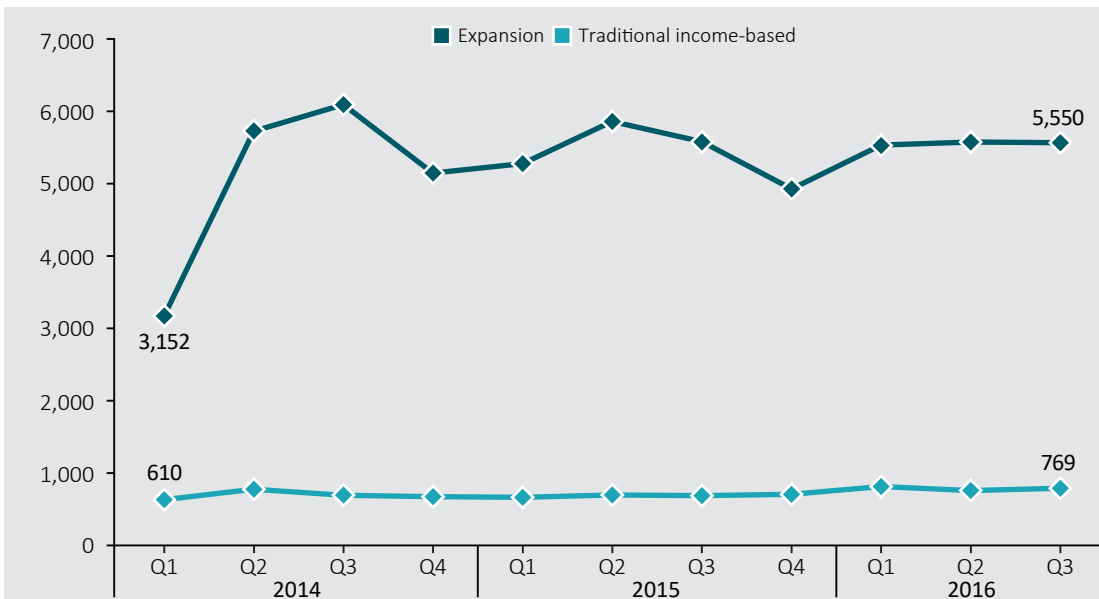


FIGURE 6.8:
Quarterly Colorectal Screenings, 2014-2016

Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS). Services are based on claims data with dates of service from 1/1/14-9/30/16.

Number of Dental Services Increased for Medicaid Expansion Enrollees

Dental services provided through Kentucky’s Medicaid program have continued to grow since Medicaid expansion. From Quarter 1 of 2014 to Quarter 3 of 2016, the number of preventive dental services increased from 30,088 to 44,065 (46.5%) (see Figure 6.9). The increase in preventive dental services was driven largely by the Medicaid expansion. While services provided to traditional Medicaid beneficiaries remained essentially flat at about 10,000 throughout that

time period, services to expansion beneficiaries increased 74.7%—from 19,340 to 33,782.

In addition to preventive dental services, traditional and Medicaid expansion also provide certain other dental services, such as fillings to treat tooth decay. These services also have increased since the Commonwealth expanded its Medicaid program, accounting for approximately half of the dental services provided to both expansion and traditional Medicaid beneficiaries (see Figure 6.10).

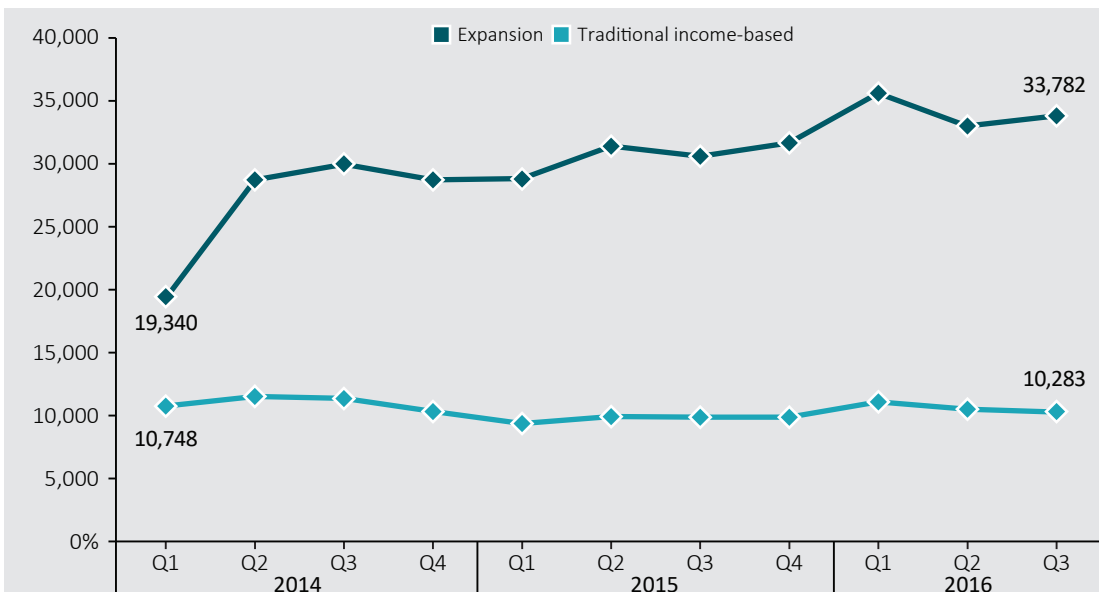
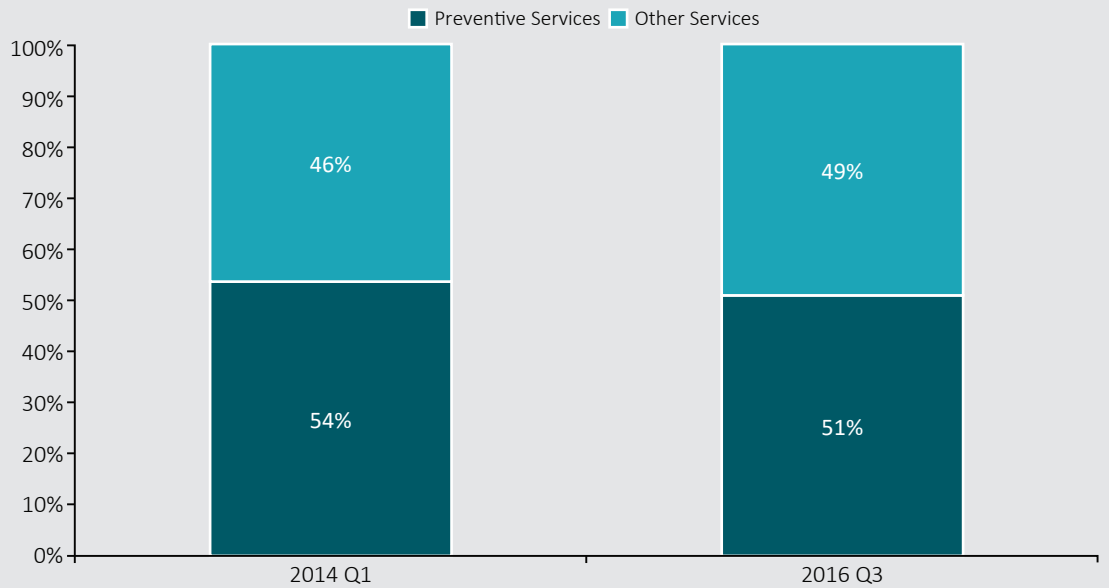


FIGURE 6.9:
Quarterly Preventive Dental Services, 2014-2016

Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS). Services are based on claims data with dates of service from 1/1/14-9/30/16.

FIGURE 6.10:
Quarterly Total Dental
Services, 2014 & 2016



Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS). Services are based on claims data with dates of service from 1/1/14-9/30/16.

Expansion Increased the Number of Breast Cancer Screenings

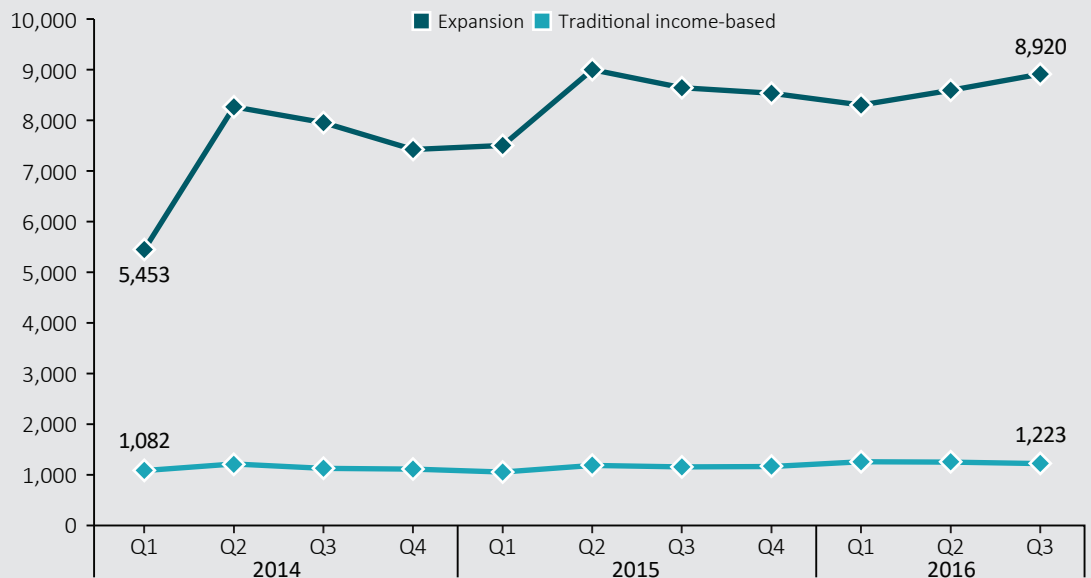
Similar to colorectal cancer, screenings for breast cancer increased early in Medicaid expansion — and primarily for Medicaid expansion enrollees. From Quarter 1 of 2014 to Quarter 2 of 2014, breast cancer screenings increased 45.1%, from 6,535 to 9,485 (see Figure 6.11). Since then, breast cancer screenings have varied from quarter-to-quarter but only increased slightly since Quarter 2 of 2014 to 10,143 in Quarter 3 of 2016. Most of those screenings — and most of the

increase — were due to expansion enrollees, which like colorectal cancer screenings is consistent with recommendations that these screenings begin for women in their 40s or 50s.^{63,64}

Traditional Medicaid Covered Fewer Births and Expansion Covered More

Since the beginning of 2014, the number of births covered by traditional and expanded Medicaid combined has varied substantially—from a high of 7,884 in Quarter 3 of 2014 to a low of 5,007 in Quarter 2 of 2015—but overall it has not followed

FIGURE 6.11:
Quarterly Breast Cancer
Screenings, 2014-2016



Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS). Services are based on claims data with dates of service from 1/1/14-9/30/16.

a clear increasing or decreasing trend (see Figure 6.12). Between Quarter 1 of 2014 and Quarter 3 of 2016, the number of births covered by Medicaid differed by only about 100 (7,131 to 7,039). However, traditional and expansion Medicaid followed different trends: The number of births covered by traditional Medicaid has declined

(from 7,009 to 5,488) but the number of births covered by Medicaid expansion has increased (from 122 to 1,551). This shift has likely occurred because women already enrolled in the state's Medicaid expansion have become pregnant, with their births then covered by Medicaid expansion rather than under traditional Medicaid.

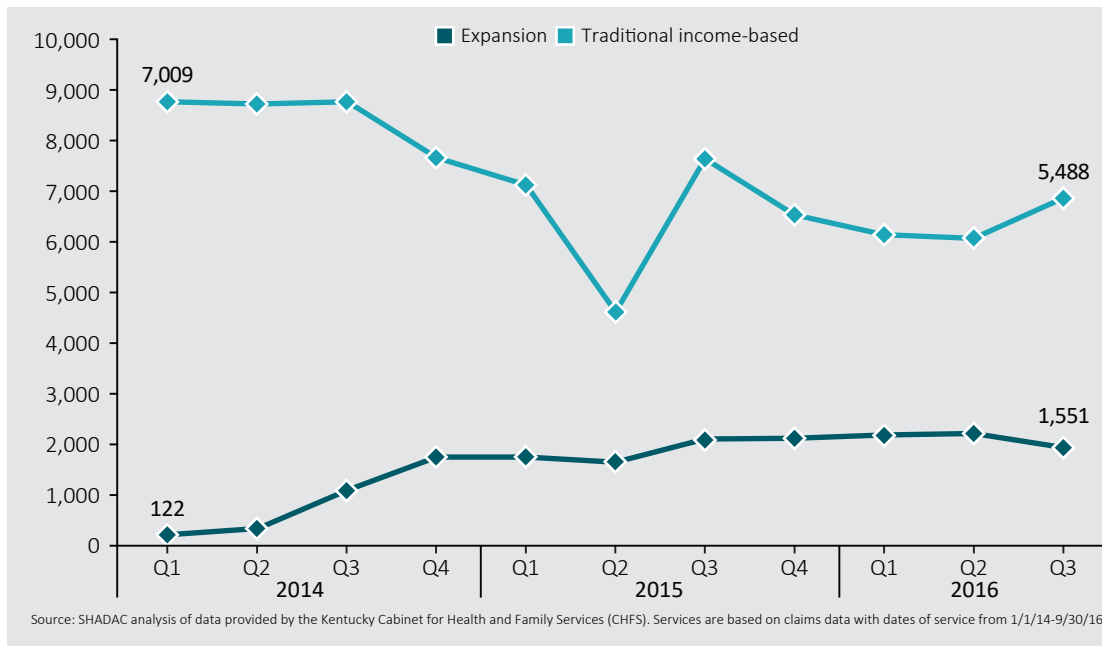


FIGURE 6.12:
Quarterly Births,
2014-2016

Hepatitis C Screenings Increased Since 2015

Screenings for hepatitis C have increased since Medicaid expansion, but unlike those for breast and colorectal cancer, the largest increases in hepatitis screenings occurred later. While hepatitis

C screenings increased somewhat during 2014, the largest quarterly increase (34.0%) occurred from Quarter 4 of 2014 to Quarter 1 of 2015, when screening rose from 3,422 to 4,586 (see Figure 6.13).



FIGURE 6.13:
Quarterly Hepatitis C
Screenings, 2014-2016

Since then screenings have continued to increase, though at a steadier pace. Additionally, the earlier trends in hepatitis C screening differ somewhat between traditional Medicaid and expansion: From Quarter 1 to Quarter 2 of 2014, hepatitis C screenings increased in expansion, while they decreased in traditional Medicaid. Since Quarter 1 of 2015, however, screenings have increased in both expansion and traditional Medicaid.

It is not clear why hepatitis screenings remained relatively flat in 2014, but the increases in 2015 and 2016 may be related to enhanced awareness of substance use in the Commonwealth. Because hepatitis C is a blood-borne disease, screening is recommended for people who currently inject or who have ever injected drugs.⁶⁵

Substance Use Treatment Services Grew More than Five Times

Since Quarter 1 of 2014, substance use disorder treatments covered by Medicaid have increased by more than five times (505.7%) in traditional and expanded Medicaid (see Figure 6.14). These data represent the number of treatments provided under Medicaid coverage, and not necessarily the number of individuals receiving treatment, as one person can receive multiple treatments.

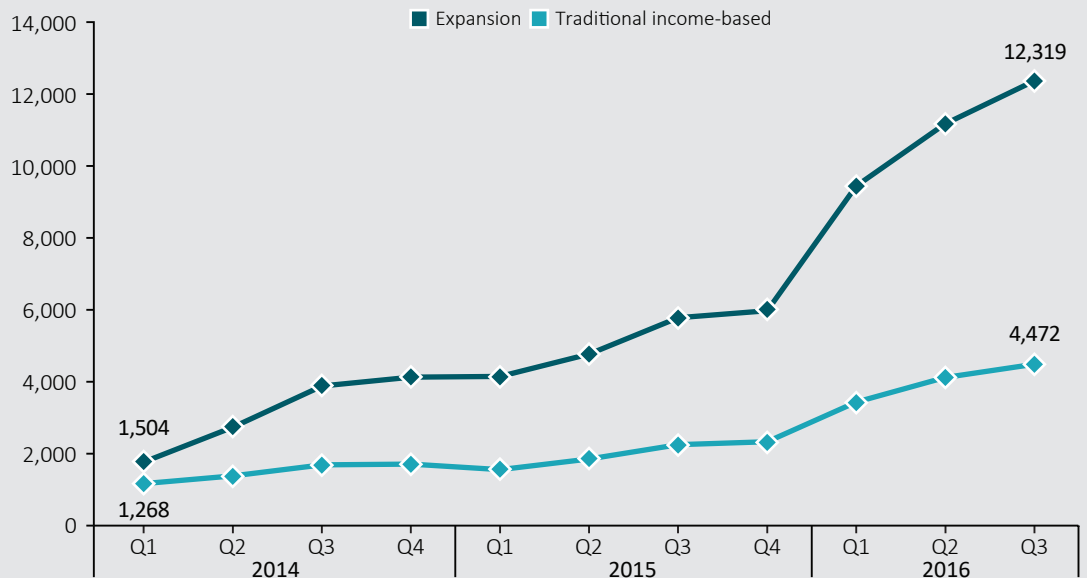
While treatments have increased each quarter, the largest quarterly increase (55.1%) occurred relatively recently, between Quarter 4 of 2015 and Quarter 1 of 2016—from 8,276 to 12,837. There may be numerous factors that contributed to the higher growth in substance use disorder

treatments compared to utilization of other Medicaid services. For example, prior to implementation of the ACA, Kentucky’s Medicaid program typically didn’t cover substance use treatment, so it could have taken time for beneficiaries and providers to learn that treatments were now covered under Medicaid. Additionally, unlike many screenings that are performed infrequently (e.g., a colonoscopy every 10 years), treatment for substance use disorders often requires a series of ongoing services for a period of time, such as regular behavioral therapy visits or clinic visits for medication-assisted therapy.

Diabetes Screening Increased More For Expansion Enrollees

From Quarter 1 of 2014 to Quarter 3 of 2015, screenings for diabetes increased modestly, from about 780 to 1,180 in traditional and expansion Medicaid combined (see Figure 6.15). But in Quarter 4 of 2015, diabetes screenings increased 220.5% to 3,782—and they have continued to increase since then to 4,495 in Quarter 3 of 2016. Overall, diabetes screenings increased nearly five times (476.3%) since Quarter 1 of 2014, although the increase was larger among expansion beneficiaries (709.7%) than traditional beneficiaries (171.0%).

FIGURE 6.14:
Quarterly Substance Use Services, 2014-2016



Source: SHADAC analysis of data provided by the Kentucky Cabinet for Health and Family Services (CHFS). Services are based on claims data with dates of service from 1/1/14-9/30/16.

The difference may be related to greater risk for diabetes among expansion beneficiaries, who tend to be older than traditional beneficiaries.⁶⁶ Because the increase in diabetes screenings far outpaces enrollment growth, this suggests that other factors also probably contributed to this increase. For example, the Kentucky General

Assembly has taken steps to address the growing prevalence of diabetes, directing the Medicaid department and other agencies in 2011 to take efforts to reduce the prevalence and improve treatment of diabetes, and appropriating \$2.6 million for diabetes prevention and control efforts in 2014.⁶⁷

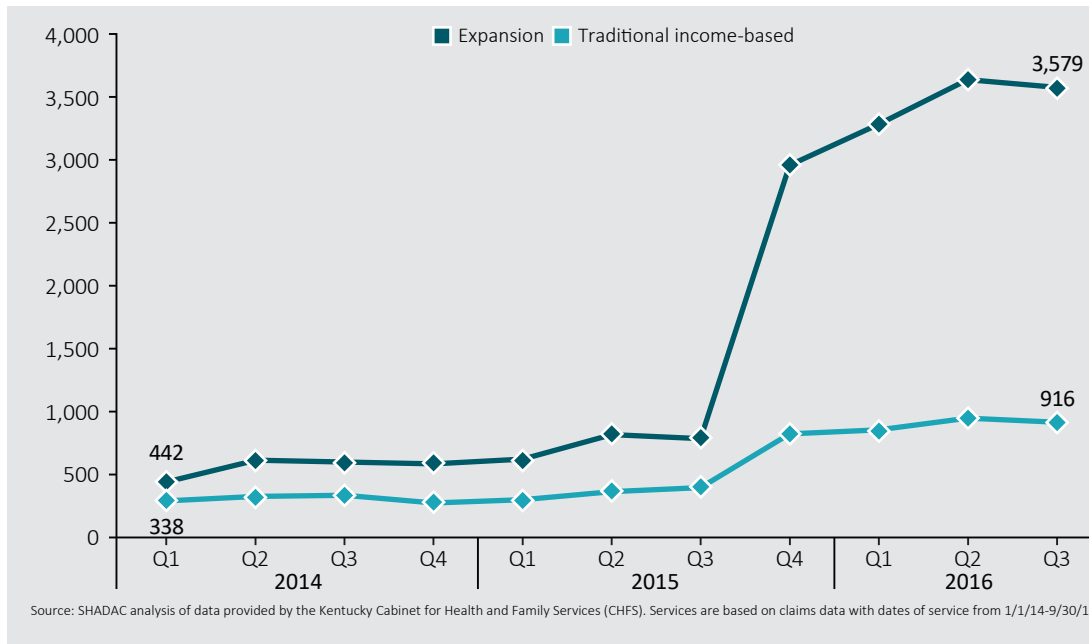


FIGURE 6.15:
Quarterly Diabetes Screenings, 2014-2016

CONCLUSION

Since Kentucky expanded its Medicaid program in 2014, enrollment of non-elderly adults in Kentucky’s combined traditional and expansion Medicaid programs has increased by 72.7%. While enrollment increased by nearly a quarter in traditional Medicaid, most of the growth occurred in the Commonwealth’s Medicaid expansion, which almost doubled from the first quarter of expansion in 2014 to the third quarter of 2016. Nearly all of the health care services we examined also experienced increases when traditional and expansion Medicaid are combined, with the exception of births covered by Medicaid, which remained mostly unchanged.

In traditional Medicaid, utilization of services did not follow a consistent trend. Some services increased (e.g., diabetes screenings and substance use treatment), while others remained largely stable (e.g., dental services and hepatitis C screenings), and births covered by Medicaid declined. However, Medicaid expansion saw increases in utilization across the board. In several cases, these increases roughly mirrored the size of enrollment increases.

For example, in the same time period that Medicaid expansion enrollment increased about 95%, utilization of colorectal cancer screenings increased, breast cancer screenings increased, preventive dental services increased and other dental services increased between about 60-105%. In other cases, the increases in services were much larger than the increase in enrollment during this time. For example, hepatitis C screenings increased more than 200%, substance use treatment services increased more than 700% and diabetes screenings also increased more than 700%. Additionally, births covered by Medicaid expansion increased more than 1,000%, but this was offset by a larger decline in births in traditional Medicaid.⁶⁸

Overall, these data show that both traditional and expansion Medicaid have covered more Kentuckians since the Commonwealth implemented the ACA in 2014, and these expansions in coverage through Kentucky’s Medicaid program have also allowed beneficiaries to access preventive services, such as cancer screenings, and other types of care, such as substance use treatment.

IV. STUDY FINDINGS: KENTUCKY HEALTH REFORM TREND ANALYSIS

KENTUCKY HEALTH REFORM SURVEY (K-HRS)

SHADAC conducted a one-time telephone survey of non-elderly adult Kentuckians in the spring of 2016 as part of our study of the impacts of the ACA in Kentucky. The Kentucky Health Reform Survey (K-HRS) was designed by SHADAC, in consultation with the Institute for Policy Research at the University of Cincinnati and the Foundation for a Healthy Kentucky. The dual-frame (landline and cell-phone) survey was conducted between March 31 and May 3, 2016, and asked respondents questions related to their health status, insurance coverage, and experiences accessing health care.

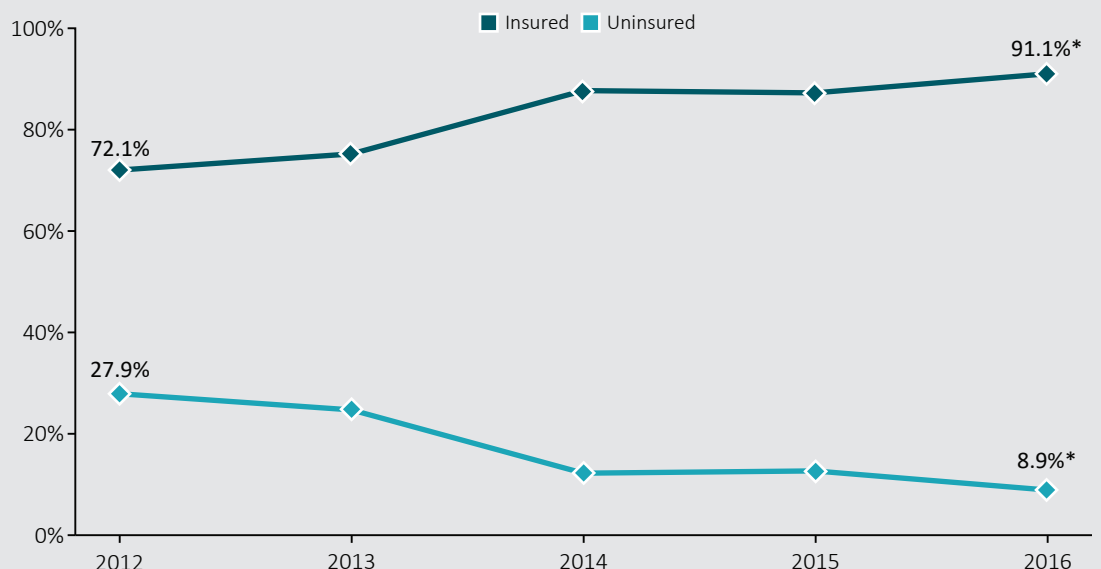
To support a trend analysis examining changes pre- and post-ACA implementation, SHADAC used the same methodology and many of the same questions as the annual Kentucky Health Issues Poll (KHIP). The KHIP is an existing survey jointly funded by the Foundation for a Healthy Kentucky and Interact for Health and conducted by the Institute for Policy Research at the University of Cincinnati. Despite using the same methodology and many of the same questions as the KHIP, the K-HRS deviated from KHIP in several notable ways. While the KHIP surveys adults of all ages in Kentucky, the K-HRS was restricted to non-elderly adults, reflecting our study's focus on implementation of the ACA. In order to compare K-HRS findings with the KHIP, the Institute of Policy Research provided SHADAC with KHIP estimates that were restricted to the non-elderly adult sample.

The findings in this section of our report are limited to non-elderly adults (ages 18-64); for ease of presentation we refer to them as Kentuckians. Where we describe 2016 estimates, these refer to the SHADAC K-HRS, and where we refer to other estimates (e.g., 2012, 2014), these are from the KHIP.

Uninsurance in Kentucky Dropped Significantly

Between 2012-2016, Kentucky experienced a statistically significant 19.0 percentage point drop in uninsurance among non-elderly adults, from 27.9% to 8.9% (see Figure 7.1). Evidence shows the decline in uninsurance was driven, in part, by the expansion of Kentucky's Medicaid program and other ACA reforms designed to increase private coverage, such as the creation of health insurance marketplaces and financial assistance to help people with moderate incomes afford health insurance. The drop in uninsurance found by the K-HRS is consistent with findings from other surveys (see Section II), providing additional support to the conclusion that the ACA has reduced uninsurance among non-elderly adults, who were specifically targeted by the law's coverage expansions.

FIGURE 7.1:
Insurance Coverage,
2012-2016



*Difference from 2012 estimate is statistically significant at the 95% level. Source: 2016 Kentucky Health Reform Survey and 2012-2015 Kentucky Health Issues Polls.

Both Public and Private Health Insurance Coverage Increased Significantly

Corresponding with the drop in Kentucky’s un-insurance rate, the Commonwealth has seen statistically significant growth in both public and private health coverage between 2012-2016. Private coverage (i.e., employer-sponsored insurance and individual-market insurance) grew by 8.0 percentage points during this period, from 40.1% in 2012 to 48.1% in 2016 (see Figure 7.2). Because other findings in this report show that employer-sponsored insurance remained stable from 2012 to 2015 (see Section II), this suggests the increase in private coverage was driven mainly by an increase in coverage through the individual market. The ACA included several provisions aimed at improving access to individual-market health insurance, including creating health insurance marketplaces where individuals could shop for and purchase private health insurance, and financial assistance to help people with moderate incomes (139-400% of FPG) afford health insurance premiums.

We also found significant growth in public health coverage between 2012-2016, increasing 12.4 percentage points from 28.6% to 41.0% of Kentuckians (see Figure 7.2). In 2014, Kentucky implemented the ACA’s provision allowing states to expand their Medicaid programs to adults with incomes up to 138% of the FPG. We believe the growth in public health coverage was largely driven by this policy, through offering coverage to people who weren’t previously eligible and attracting people who were already eligible before the ACA but not enrolled. These findings are consistent with other survey data that show an increase in Medicaid/CHIP coverage from 2012-2015 (see Section II) and administrative data that show an increase in enrollment by non-elderly adults in the Commonwealth’s Medicaid program since 2014 (see Section III). In the K-HRS and KHIP, public coverage also includes those with insurance through military plans and non-elderly Medicare beneficiaries, but those populations are relatively small in Kentucky and were unlikely to have a large effect public coverage rates.

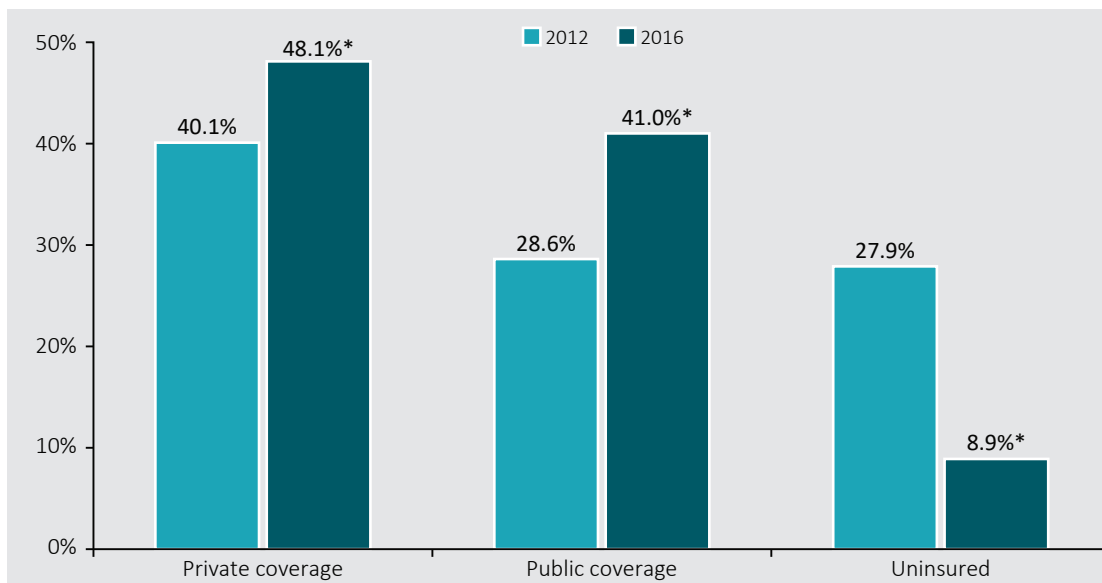


FIGURE 7.2:
Insurance Coverage by Type, 2012 & 2016

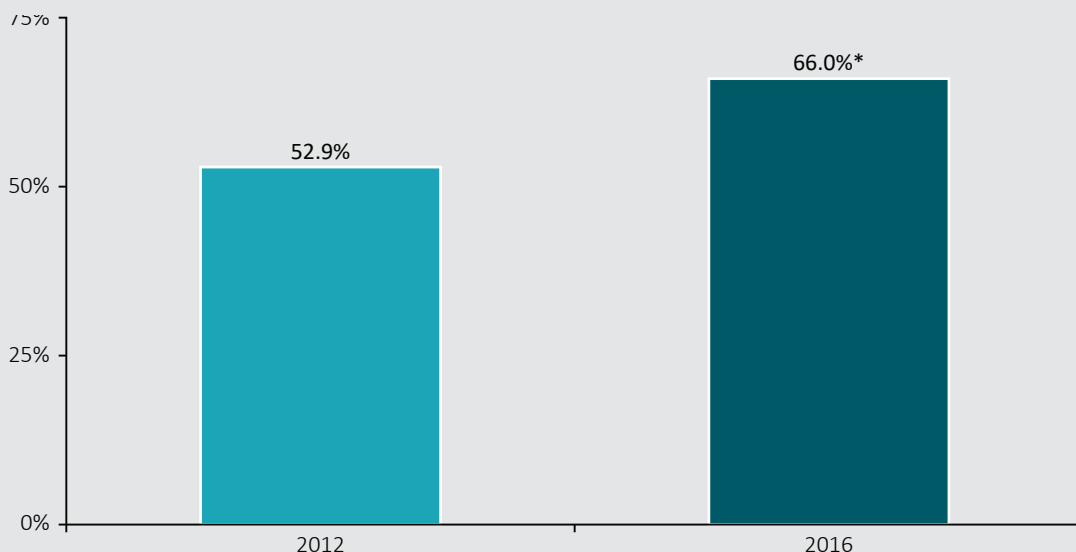
*Difference is statistically significant at the 95% level. Source: 2016 Kentucky Health Reform Survey and 2012 Kentucky Health Issues Poll.

Dental Coverage Increased to Two-thirds of Kentuckians, But Dental Visits Stayed Stable

Although dental insurance was not a key focus of the ACA, we found a statistically significant increase in dental coverage in Kentucky. Between 2012-2016, dental coverage increased 13.1 percentage points for nonelderly adults, from 52.9% to 66.0% (see Figure 7.3). Evidence suggests that this increase in dental coverage was due mostly to Kentucky’s Medicaid expansion.

The ACA did include some limited provisions that could support private dental coverage—such as allowing dental coverage to be included in health insurance plans sold through marketplaces, as well as allowing stand-alone dental plans to be sold through marketplaces—but the law did not require private health insurance plans to cover dental care. In Kentucky, some marketplace health insurance plans offer optional dental benefits, but not all plans included these.⁶⁹

FIGURE 7.3:
Dental Coverage,
2012 & 2016

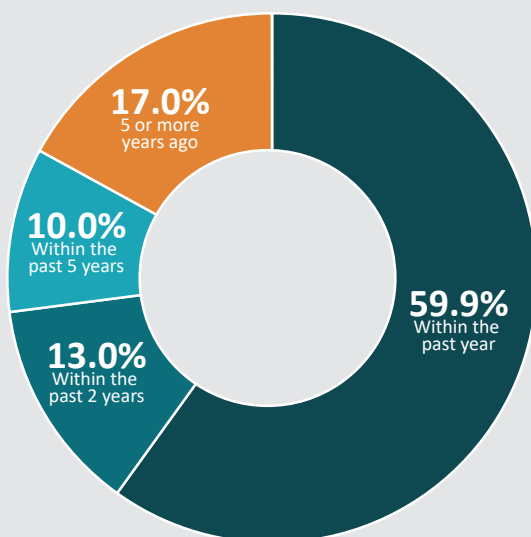


Source: 2016 Kentucky Health Reform Survey and 2012 Kentucky Health Issues Poll.

Additionally, stand-alone dental plans have been offered through Kentucky’s marketplace, but enrollment in these has been relatively small in Kentucky and the U.S. compared to health insurance plans.^{70,71} The ACA did not require that states expanding their Medicaid programs include dental coverage, but it allowed states the choice to provide dental coverage—a policy option that Kentucky adopted. Supporting the idea that Kentucky’s increase in dental coverage was the result of Medicaid expansion, the size of the increase in dental coverage (13.1 percentage points) was similar to the size of the increase in public coverage (12.4 percentage points).

Despite increased dental coverage, we did not find changes in self-reported use of dental care. Among non-elderly adult Kentuckians in 2016, 59.9% reported having a dental visit in the past year, while 17.0% reported they hadn’t visited a dentist within the past 5 years, which were not significantly different than 2012 (see Figure 7.4). The K-HRS did not ask respondents why they had forgone dental care, so we do not know why the increase in dental coverage hasn’t resulted in increased use of dental services; however, some research suggests there are other barriers to care in Kentucky, such as shortages of dental providers, particularly in rural areas of the state.⁷²

FIGURE 7.4:
Time Since Last Dental
Visit, 2016



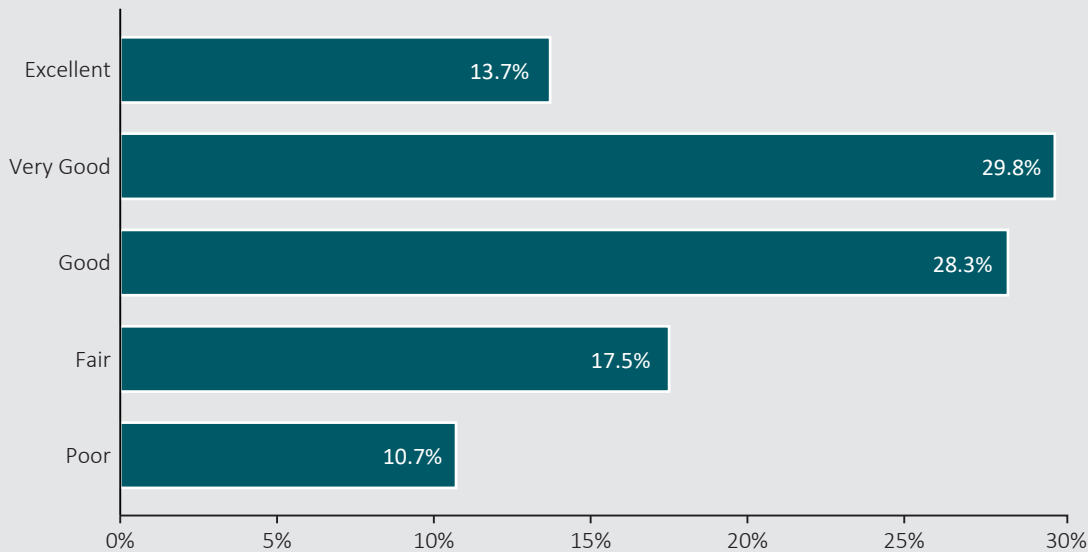
Source: 2016 Kentucky Health Reform Survey.

Self-Reported Health Status Remained Unchanged

Consistent with similar findings in Section II of this report, we did not find statistically significant changes in Kentuckians’ self-reported health status between 2012-2016. In 2016, most non-elderly adults reported their health was “very good” (29.3%) or “good” (28.3%) (see Figure 7.5). Only 13.7% reported “excellent” health, and the remainder said their health was “fair” (17.5%) or “poor” (10.7%). None of these estimates were significantly different from 2012. As discussed earlier in this report, because there are numerous factors that influence overall health—including genetics, lifestyle, environment and other factors—and because health improvements may take years to occur, it is not surprising that Kentuckians’ health status has not changed significantly within the first few years of implementation of the ACA. To gauge the potential impacts of the

FIGURE 7.5:

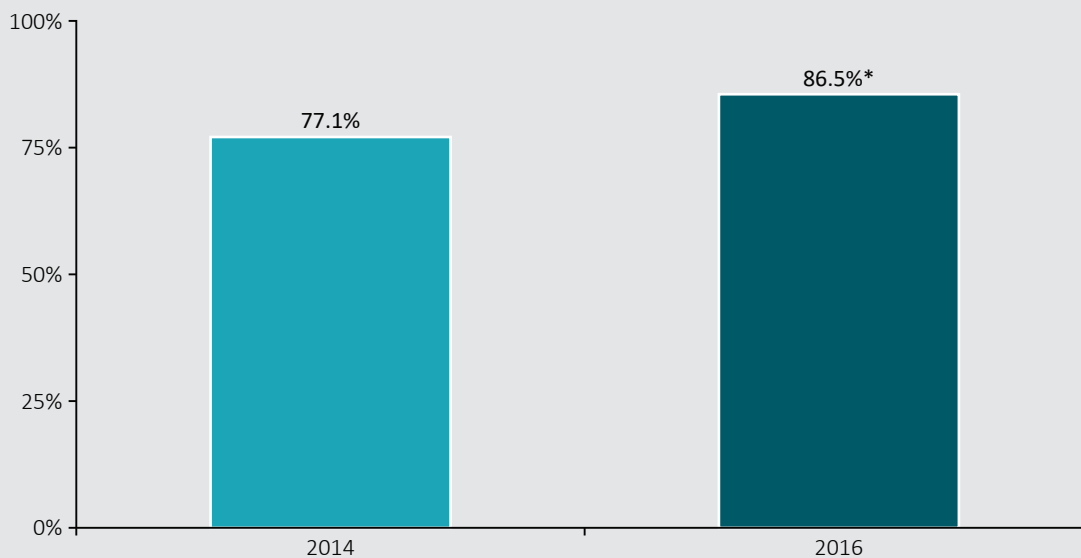
Health Status, 2016



Source: 2016 Kentucky Health Reform Survey.

FIGURE 7.6:

Had Usual Source of Care



Source: 2016 Kentucky Health Reform Survey and 2014 Kentucky Health Issues Poll.

ACA on Kentuckians' health, it will be important for future research to study changes in health status over a longer time period.

Since 2014, More Kentuckians Reported Usual Source of Care

The K-HRS also asked questions about access to health care. Comparable pre-ACA data were not available from the 2012 KHIP, but data were available from 2014,⁷³ the first year of ACA implementation in Kentucky. It is important to note that the following findings examine changes from within the first years of ACA implementation, not a pre-ACA/post-ACA analysis as found in most

of this report. Additionally, it is important to note that although the K-HRS measure of "usual source of care" is similar to the "usual source of care" indicator obtained from the NHIS (reported in Section II of this report), there is a key difference. Both surveys ask whether respondents have a place they usually visit when they need health care, but the NHIS estimates (found in Section II) exclude people who say an Emergency Department is their usual source of care. In contrast, the K-HRS estimates include people who report ED as their usual source of care, which we discuss in further detail below.

We found that from 2014-2016, there was a statically significant increase of 9.4 percentage points in the share of Kentuckians who reported having a usual source of care, from 77.1% to 86.5% (see Figure 7.6). This is consistent with a similar measure found in Section II. Among those who report having a usual source of care, the top three places where people usually sought care in 2016 were a private doctor’s office (62.9%), a community-based health center (16.0%) and a hospital out-patient department (5.8%).

These were also the top three places reported in 2012, and the estimates did not change significantly (see Figure 7.7). In 2016, 3.9% of non-elderly adult Kentuckians reported using a hospital ED as their usual source of care, which was similar to 3.6% in 2014. While these estimates should be considered with caution due to their unreliability, it is worth acknowledging that EDs were not named as one of the top three usual sources of care in 2014 or 2016.⁷⁴

FIGURE 7.7:
Top Three Usual
Sources of Care

LOCATION	PERCENT
1. Private doctor's office	62.9%
2. Community-based health center	16.0%
3. Hospital outpatient department	5.8%

Source: 2016 Kentucky Health Reform Survey.

CONCLUSION

The findings from our trend analysis of 2016 K-HRS estimates and baseline 2012 KHIP estimates are largely consistent with findings from other components of our study. Since 2012, the Commonwealth has seen a statistically significant decline in uninsurance among non-elderly adults, from more than one in four (27.9%), to less than one in 10 (8.9%) by early 2016.

That decline in uninsurance appears to have been driven by gains in both private and public coverage, as a result of Kentucky’s adoption of the ACA’s coverage expansion provisions — the creation of a state-based health insurance marketplace with federal subsidies provided to income-eligible individuals in the form of tax credits and the Medicaid expansion for lower-income adults.

In addition to gains in health insurance coverage, we also documented statistically significant increases in dental coverage, from just over half (52.9%) of non-elderly adults reporting dental coverage in 2012 to approximately two-thirds (66.0%) in 2016. Despite those gains in dental coverage, however, the Commonwealth hasn’t seen increases in Kentuckians reporting visiting a dentist, suggesting other barriers to receiving dental care.

Although pre-ACA comparison data were not available, we also found improvements in the percentage of Kentuckians who report having a usual source of care, which suggests the observed increases in coverage may be having the ACA’s intended effect of improving access to health care. However, our analysis of K-HRS and KHIP data did not find changes in Kentuckians’ self-reported health status, so improvements in health insurance coverage and access to care don’t yet appear to have resulted in significant health improvements.

V. STUDY CONCLUSIONS

Overall, our study of the impacts of implementation of the ACA in Kentucky has found the Commonwealth has experienced some clear improvements since our baseline year of 2012, but there are other areas in which Kentucky has not yet seen substantial progress. In the domain of coverage, the Commonwealth's uninsurance rate has declined significantly, with more Kentuckians covered by both private and public health insurance. Kentuckians have also seen some improvements in access, particularly increases in Kentuckians who report having a usual source of care and visiting a doctor in the past year. The Commonwealth also has experienced improvements in cost. Since implementation of the ACA, fewer Kentuckians report trouble paying medical bills and delaying or going without needed care due to cost. Additionally, Kentucky hospitals have seen charity care and self-pay charges for the uninsured drop by two-thirds since 2012. While we found evidence of some improvements in quality indicators tied to ACA provisions, such as increases in breastfeeding initiation rates for newborns, quality overall has not shown clear progress like the domains of coverage, access and cost. Similarly, health outcomes largely appeared to remain stable, which is not surprising because any improvements in the health of Kentuckians may take years, and we currently only have data from the first few years of ACA implementation. Ultimately, we believe it will be important to continue to track the performance of Kentucky in each of the five domains of this study to determine whether the improvements we found are sustained, and whether those domains that remained relatively stable through our study see improvements over a longer period of time.

Coverage

Our study has found that Kentucky's uninsurance rate has dropped substantially since implementation of the Affordable Care Act. Between 2012-2015, Kentucky's uninsurance rate dropped by more than half—from 13.6% to 6.1%—based on an analysis of estimates from the American Community Survey. While other states also have seen declines in uninsurance since the ACA, Kentucky's decline has been larger than the U.S. and most neighboring states.

We also found evidence that Kentucky's decline in uninsurance was driven by ACA policies, particularly the Commonwealth's Medicaid expansion and creation of a health insurance marketplace, with financial assistance for people with moderate incomes. Analysis of federal survey data found increases in Medicaid coverage and individual-market coverage, which was supported by similar findings from our Kentucky Health Reform Survey. This is consistent with administrative data from the Kentucky Cabinet for Health and Family Services, which show that enrollment in the Commonwealth's Medicaid expansion reached more than 500,000 in 2016, and enrollment of non-elderly adults in Kentucky's traditional Medicaid program grew nearly 25% to almost 145,000. In another study report, we found that low-income Kentuckians were less likely to be uninsured than low-income residents of neighboring states that haven't expanded their Medicaid programs or expanded them later.⁷⁵

Kentucky's coverage gains have had a broad impact on the Commonwealth's population. We found reductions in uninsurance for both males and females, across ages and income levels, and among most racial and ethnic groups. Only the Hispanic/Latino and Asian populations did not experience significant declines in uninsurance.

It is noteworthy that certain groups of Kentuckians specifically targeted by the ACA—those with lower and moderate incomes, and non-elderly adults—experienced the largest declines in uninsurance. However, other Kentuckians have also seen significant reductions in uninsurance.

Since implementation of the ACA, even Kentuckians with incomes too high to qualify for Medicaid or marketplace tax credits experienced a decline in uninsurance. Additionally, fewer Kentucky children are uninsured, most likely because their parents enrolled them in coverage at the same time they enrolled themselves in health insurance.⁷⁶

Despite increased health insurance coverage in Kentucky, there are still disparities and gaps. In 2015, the Hispanic/Latino population's uninsurance rate was nearly four times the Commonwealth's average, the rate for young adults was almost twice the average, and the rate for low-income Kentuckians was one and a half times the Commonwealth's average. Although Kentucky has seen substantial reductions in uninsurance, approximately 320,000 Kentuckians remained uninsured in early 2016—nearly 90% of whom had lower or moderate incomes that could make them eligible for Medicaid coverage or financial assistance to buy private insurance.⁷⁷ Our 2016 K-HRS survey of non-elderly adults also found that more than one in ten insured Kentuckians said they were concerned about losing their coverage in the next year, and that increased to more than one in four among lower-income people.⁷⁸ Additionally, while the percentage of Kentuckians with employer-sponsored insurance has remained steady since 2012, the percentage of small employers that offer health insurance to their workers has declined significantly since 2012, continuing a pre-ACA trend.

Access

The ACA's coverage expansions were designed in part to improve access to health care. Although data are limited at this point in implementation of the ACA, we have found evidence of some early improvements in access to health care.

Through analysis of federal survey data and our own survey, we found increases since 2012 in the percentage of Kentuckians who said they have a usual source of health care. Federal survey data also showed an increase in the percentage of Kentuckians who reported visiting a health care provider in the past year. We also found that fewer elderly Kentuckians are taking steps such as delaying refills, skipping doses and taking less medication than prescribed in response to high drug costs—likely an impact of the ACA's provision to gradually close the Medicare Part D “donut hole.” Additionally, we did not find evidence that the increased number of Kentuckians with health insurance has made it harder to get care when needed; the percentages of Kentuckians saying they could find a doctor when needed and found a provider who accepted their insurance remained statistically stable and above 90%.

Since Kentucky expanded its Medicaid program in 2014, the program has seen continued growth in services provided to beneficiaries, mirroring the growth in enrollment. The increases in breast and colorectal cancer screenings, diabetes screenings, hepatitis C screenings, and other services suggests Medicaid expansion is helping to provide access to care for new beneficiaries.

In addition to the ACA's broader coverage expansions, the law included some provisions specifically targeting substance use disorders, such as requiring that individual-market plans and Medicaid expansion cover the treatment of substance use for enrollees. In a special report examining the impacts of the ACA on substance use in Kentucky, we found indications that the ACA may be contributing to increases in treatment, especially through Medicaid.⁷⁹ Since the Commonwealth implemented Medicaid expansion in 2014—offering coverage of substance use treatment to expansion enrollees and enhancing substance use treatment benefits for traditional Medicaid enrollees—the number of substance use treatments covered by the program has grown by more than 500%. Some early data from 2014 suggest that unmet need for substance use services continues to persist in Kentucky, but understanding any impacts will require future research as later years of data become available.

In other areas—particularly dental—the study has not found that coverage expansions have resulted in clear improvements in access. Although dental health was not a key focus of the ACA, the law did include some policies to support this, such as allowing dental insurance

policies to be sold through health insurance marketplaces, and giving states the option of covering dental care through their Medicaid expansions. Our survey found the percentage of non-elderly adult Kentuckians with dental coverage increased significantly since implementation of the ACA, but we found no improvement in the percentage of Kentuckians who visited a dentist in the prior year.

Cost

By expanding coverage, the ACA intended to both reduce cost as a barrier to obtaining health care and reduce the financial strain of health care costs on families. Despite concerns that have been raised about the growth of premiums for individual-market coverage and about the affordability of cost-sharing, our study has found some early improvements in measures of cost. Additionally, we found that Kentucky hospitals have experienced a dramatic decline in costs associated with uninsured patients. Since 2012, Kentucky hospitals have experienced a 67% drop in charity care and charges to self-pay patients—from \$2.4 billion in 2012 to \$786 million in 2015.

Since 2012, the percentage of Kentuckians reporting trouble paying medical bills dropped significantly, from almost half to slightly more than one-third in 2015. While Kentucky's rate remained higher than the U.S. rate in 2015, the Commonwealth's rate is now similar to most of its neighboring states. Additionally, the percentage of Kentuckians who reported delaying or going without needed care due to cost dropped by approximately half from 2012-2015. However, our 2016 survey found that about one in five non-elderly adults reported they delayed or went without care due to cost. Those cost barriers were higher for lower-income Kentuckians, with more than one in four reporting delayed or forgone care due to cost. Additionally, cost was a greater barrier for Kentuckians who may have more need for health care, with almost two-thirds of non-elderly adults reporting “poor” health saying they went without care due to cost, compared to a rate of about one-third overall.

In examining costs of coverage through states' insurance marketplaces, we found evidence that Kentucky had lower premium costs than comparison states. For 2015 coverage, one in ten people in the U.S. who bought health insurance through marketplaces chose gold- or platinum-level plans, which tend to have higher premiums than bronze- and silver-level plans.⁸⁰ By comparison, one in four Kentuckians enrolled in gold- or platinum-level plans, suggesting that these plans may have been more affordable in Kentucky. While Kentuckians purchased more lower-cost bronze- and silver-level plans for 2016, our analysis found Kentucky had the lowest silver-level marketplace premiums that year compared to neighboring states.⁸¹ Early data for 2017

coverage suggest premiums in Kentucky's marketplace may have increased somewhat compared with other states, but premiums in Kentucky's marketplace remained lower than most neighboring states for the second-lowest cost silver-level plans—a key benchmark used for determining financial assistance.⁸²

As in other states, concerns have been raised in Kentucky about the affordability of health insurance deductibles. We found that in 2016, most Kentuckians who bought coverage through the Commonwealth's health insurance marketplace enrolled in silver-level plans (60%), which had median deductibles of \$3,500 for single coverage, while about a quarter enrolled in bronze-level plans with median deductibles of \$6,000 for single coverage. However, other data suggest that cost-sharing has remained relatively stable since before the ACA. For Kentuckians overall, we found no statistically significant change in out-of-pocket spending since 2012, and we found no significant increase in underinsurance.

Quality

Beyond the ACA's focus on expanding health insurance coverage, the law also included provisions to improve the quality of care people receive. Although we did find some improvements, most of the indicators of health care quality that we tracked did not show clear changes in either a positive or negative direction. Because any measureable improvements may take time to accumulate, understanding the impact of the ACA on quality of health care will likely require continued monitoring research in the future.

Among the ACA's efforts to improve quality of health care were policies to reduce financial barriers to preventive health services and infant breastfeeding. Between 2012-2014, Kentucky experienced an increase in the percentage of people obtaining recommended colorectal cancer screenings.⁸³ Although there may be other factors that contributed to this increase, the ACA may also have played a role by requiring that most health insurance plans cover recommended preventive screenings without cost-sharing for individuals. However, we did not find improvements in another preventive measure, cholesterol screening. Since 2012, Kentucky also has experienced improvements in the percentage of newborns who were breastfed at discharge from the hospital, from 62.8% to 68.7% in 2015 — a practice that was supported by ACA requirements for most private health insurance to cover breastfeeding counseling and equipment, such as breast pumps.

By improving individuals' access to health care, as well as encouraging payment reforms to reward hospitals' and providers' improvements in quality, the ACA also attempted to reduce unnecessary hospital admissions. Since 2012, Kentucky has seen mixed results in indicators related to preventable hospitalizations—admissions

due to diabetes short-term complications increased, while admissions related to hypertension and asthma both declined. Most of the other quality indicators that we tracked remained largely unchanged. Unprotected sex among high school students did not change since implementation of the ACA, although the ACA was not expected to have a large effect on this measure. The Commonwealth's rate of low birth weight remained steady at 8.7%, and racial and ethnic disparities continued into 2015. The rate of death for hospitalizations typically considered low-risk also remained mostly steady between 2012-2014.

Health Outcomes

Ultimately, the goal of health care—and by extension the ACA's coverage expansions—is to improve people's health. Although there are numerous factors that influence health, and improving the health of Kentuckians may take years, we tracked several measures of health outcomes. The Commonwealth has not made improvements in most of the measures, but it will be important to monitor these outcomes in the future to determine the long-term impacts of the ACA.

Of the health outcome indicators in our study, Kentucky's performance only improved in one: The Commonwealth's adult cigarette smoking rate declined from 28.3% in 2012 to 26.0% in 2015. However, the smoking rate among high school students did not change since our study baseline. The ACA included certain provisions that may have contributed to the decline in cigarette smoking—such as requiring health insurance plans to cover smoking cessation treatment and allowing health insurers to charge higher premiums for tobacco users. However, additional research is needed to determine whether the decline in Kentucky's smoking rate was driven by the ACA or other reasons, such as increased use of e-cigarettes.

Since our study baseline, Kentucky's obesity rate for adults increased from 31.3% to 34.6% in 2015. The Commonwealth's high school obesity rate did not change, however. Another measure of health outcomes showed ambiguous results, with the percentage of adult Kentuckians reporting a chronic disease increasing significantly from 26.8% in 2012 to 29.1% in 2014. However, the rate in 2015 (28.7%) was not significantly different from 2012. Because of this, future research may be needed to determine whether reported chronic disease prevalence has in fact increased, and if so, the reasons it has increased. For example, it could reflect an actual increase in the number of people with diseases such as diabetes, or it could mean that people are now more aware of their health conditions after obtaining health insurance and accessing care. Other measures of health outcomes have not shown changes since implementation of the ACA.

VI. APPENDIX: DATA SOURCES, METHODS, & INDICATORS

In this Appendix, we describe our data collection procedures and methods 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, 2013, 2014, 2015)

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 3.5 million people nationally and nearly 52,000 in Kentucky in 2015). This allows us to provide estimates by subpopulations at higher levels of precision than would be possible 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, 2014, 2015)

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 about 200,000 people nationally, with over 2,300 in Kentucky in 2015. 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. That is why SHADAC uses baseline estimates from 2013 for our underinsurance indicator (the question changes didn't affect our other CPS indicator). In fact, 2013 was a transition year for the set of income questions, as both the new and old questions were concurrently asked. The estimates we use in this study are based on the portion of the 2013 sample that used the new questions.

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, 2013, 2014, 2015)

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 2015 was over 39,000 businesses at the national level. 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 private-sector employer offer rates and premiums. We accessed these estimates from the MEPS-IC web site.

National Health Interview Survey (2012, 2013, 2014, 2015)

The National Health Interview Survey (NHIS) is a federal survey sponsored by the Centers 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 103,000 in 2015 (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. 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. For usual source of care, data estimates for 2012-2015 were updated since the last semi-annual report using a revised methodology, so data may differ from prior reports. Data for ages 65+ were no longer available for NHIS indicators usual source of care and told provider accepts insurance, so these estimates were excluded from this report.

The changes to drugs due to cost measure includes asking the doctor for cheaper medications, delaying refills, taking less medication than prescribed, skipping dosages, 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 (2012, 2013, 2014, 2015)

The Behavioral Risk Factor Surveillance System (BRFSS) 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. The Kentucky BRFSS has an average sample size of more than 9,000 adults (ages 18+).

SHADAC has changed the way we obtained the BRFSS since the baseline report, opting to access and analyze the public use data for all estimates. To maintain consistency and comparability, we have updated our baseline estimates, as well. Since the initial study baseline report, we added a new BRFSS indicator with the estimate of cigarette use in adults, added to the health outcomes domain. This estimate reports the percentage of adults who have smoked 100 or more cigarettes in their lifetime and who currently smoke some days or every day.

National Survey on Drug Use and Health (2011, 2012, 2013, 2014)

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, 2012/2013, and 2013/2014. Because 2014/2015 data we not available in time for this report, we used 2013/2014 as our time period for estimating the impacts of ACA implementation; however, it is important to note that because these data are pooled pre- and post-ACA implementation, they may underestimate any effects of the law. For the baseline report, we did not test for significance because the necessary data were not available; however, those data are now available and we included statistical tests in this report. 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.

Healthcare Cost and Utilization Project (2012, 2013, 2014)

The Healthcare Cost and Utilization Project (HCUP), is sponsored by the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality (AHRQ) and provides data on health statistics and information on hospital inpatient and emergency department utilization.

We use HCUP data for estimates in the quality domain, including diabetes short-term admissions, hypertension admissions, asthma admissions, and death rate in low mortality DRGs. These indicators were previously reported with data from a different source and due to potential differences in the methodology, these data may not match similar data in prior reports. The diabetes admission estimate reports the diabetes short-term complications admission rate for adults. The hypertension estimate reports the hypertension admission rate for adults. The asthma estimate reports asthma in younger adults' admission rate for adults ages 18 to 39. The death rate estimate reports the dying in the hospital while getting care for a condition that rarely results in death rate cases. Because these data are not based on a sample, there was no need for statistical testing of differences.

Youth Risk Behavior Surveillance System (2013, 2015)

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 is given to a sample of students, and is a bi-annual survey conducted in odd-numbered years, with results released the year following the survey. In 2015, the Kentucky sample from the YRBSS included more than 2,500 students. The source for the indicators obtained for this source is online data from the CDC.

We include the following three measures from the survey: unprotected sex among high school students in the quality domain, as well as obesity rates and cigarette use in the health outcomes domain. 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 cigarette measure reports the percentage of high school students who currently smoked cigarettes, on at least one day during the 30 days before the survey. Like the adult cigarette use measure, this indicator did not appear in our baseline report because it was added later in the study.

Web-based Injury Statistics Query and Reporting System (2012, 2013, 2014, 2015)

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 (2012, 2013, 2014, 2015)

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 these data are not based on a sample, (the system records all known occurrences of low birth weight, and reports are released annually), there was no need for statistical testing of differences.

Kentucky Outpatient & Inpatient Hospital Administrative Claims Data (2012, 2013, 2014, 2015)

The Kentucky Outpatient & Inpatient Hospital Administrative Claims Data were provided by the Kentucky Cabinet for Health and Family Services. For our study, we use charges for self-pay and charity care as a proxy for uncompensated care. In these data we are not able to discern between paid and unpaid charges. Since hospitals are likely to receive some payment for at least of portion of self-pay charges, we acknowledge that not all self-pay charges become "uncompensated". For the purposes of estimating uncompensated care, we assume that the majority of the self-pay charges are not paid in full. Unlike for our baseline report, we obtained these data directly from the Cabinet, and the data may differ from the baseline due to different methodology. Additionally, the Cabinet has revised its 2015 data, so those charity care and self-pay charges in this report differ from earlier reports.

Kentucky Breastfeeding at Hospital Discharge Data (2012, 2013, 2014, 2015)

The Kentucky Cabinet for Health and Family Services provided hospital data on initiation of breastfeeding prior to hospital discharge for 2012 through 2015. The 2014 and 2015 data are preliminary and have not yet been finalized as of February 2017. The source for this indicator has changed since the baseline report due to changes in the availability of the prior source. Because these data are not based on a sample, (the Commonwealth records all known births), there was no need for statistical testing of differences.

Kentucky Medicaid Enrollment and Services Data (2014, 2015, 2016)

This report also contains data provided by the Cabinet for Medicaid Enrollment and Services from the first quarter of 2014 through the third quarter of 2016. These data include only traditional income-based Medicaid and ACA expansion Medicaid enrollees ages 19-64. We exclude special enrollee categories: Medicare-Medicaid dual eligible; foster, former foster, and kinship care; intermediate care facility, nursing home, and hospice populations; Medicare savings and special populations; SSI recipients; waiver populations, or incomplete claims that do not show enrollee category. Dental services represent preventive dental visits only; other dental visits are excluded. Because this is not a survey, but rather an inventory of this occurrences, there is no sampling or sample size and no need for statistical testing of differences.

Kentucky Health Reform Survey (2016)

The Kentucky Health Reform Survey (K-HRS) was conducted by SHADAC and the University of Cincinnati Institute for Policy Research from March-May 2016. The methodology and a substantial part of the survey instrument were based on the existing Kentucky Health Issues Poll (KHIP), allowing for comparisons of the estimates from the K-HRS to prior KHIP estimates and potentially future KHIP estimates yet more depth in several policy-relevant areas than possible in the KHIP. Survey questions were selected in consultation with the Foundation and study Oversight Committee, with overarching goals of maintaining consistency with the KHIP to allow trend analyses and investigating key components of ACA implementation in Kentucky, such as the Commonwealth's kynect state-based marketplace. The dual-frame (landline and cell phone) survey sampled non-elderly adult Kentuckians for a total of 1,639 interviews. The measures in this report include data on uninsurance and coverage types, concern about losing coverage, forgone or delayed care due to cost, dental coverage and care, and emergency department use.

Kentucky Health Issues Poll (2012, 2014)

The Kentucky Health Issues Poll (KHIP) is an annual telephone opinion poll of Kentucky adults commissioned jointly by the Foundation for a Healthy Kentucky and Interact for Health, and conducted by the Institute for Policy Research at the University of Cincinnati (UC-IPR). The KHIP has been conducted annually each fall since 2008 and provides a snapshot of Kentuckians' views on various health topics. In this report, KHIP data for 2012 and 2014 are used for comparison with 2016 K-HRS data from questions aligned with the KHIP instrument. For the K-HRS/KHIP analysis, UC-IPR provided SHADAC with KHIP estimates based on the non-elderly adult sample, to ensure comparability of the estimates.

Reporting and analysis of data

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.

VII. ENDNOTES

- ¹ Though Arkansas is not technically a border state, we include it because it is often compared to Kentucky due to similarities in health status, demographics, and state policies.
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- ³ State Health Access Data Assistance Center (SHADAC). (2013) State-level Trends in Employer-sponsored Health Insurance: A State-by-state Analysis. Available at: http://www.shadac.org/sites/default/files/Old_files/shadac/publications/ESI_Report_2013.pdf
- ⁴ United States Census Bureau. (2012). American FactFinder. Available at: <https://factfinder.census.gov/>
- ⁵ The state-comparison charts in this report indicate which of Kentucky's neighboring states have opted to expand their Medicaid programs as part of ACA (Arkansas, Illinois, Indiana, Ohio and West Virginia). The only one of these states that did not implement its expansion in 2014 was Indiana, which expanded its Medicaid program via a Section 1115 waiver in 2015.
- ⁶ In 2015, for a 1-person household, 100% of the FPG was \$11,770 and 138% of FPG was \$16,243. The categories are adjusted for family size; in 2014, 100% of the FPG for a 4-person household was \$24,250 and 138% of FPG was \$33,465.
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- ¹² Agency for Healthcare Research and Quality. (2010). National Health care Quality Report. Chapter 9: Access to Care. Available at: <http://archive.ahrq.gov/research/findings/nhqdr/nhqr10/Chap9.html>
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- ¹⁷ U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation. (Undated). Health System Measurement Project: Percentage of People Who Have a Specific Source of Ongoing Medical Care.
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- ²⁹ SHADAC analysis of 2015 American Community Survey estimates.
- ³⁰ The 2015 charity care and self-pay charges have been revised by the Kentucky Cabinet for Health and Family Services. An earlier report found a drop of 77% to \$552 million, but this has been revised as a 67% drop to \$786 million in 2015.
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- ⁶⁸ In the case of births covered by Medicaid expansion, these increased by more than 1,400 — from 122 in Quarter 1 of 2014 to 1,551 in Quarter 3 of 2016 — although births in traditional Medicaid dropped by more than 1,500. This was likely due in part to changes in how pregnant women enroll in Medicaid. Prior to the ACA, many women would enroll in traditional Medicaid after learning they were pregnant.

But since 2014, more women are covered by Medicaid before becoming pregnant, so their births would mostly be covered by expansion Medicaid rather than traditional Medicaid.

⁶⁹ Kentucky Health Benefit Exchange. (2017). Summary of Benefits and Coverage (SBC). Available at: [http://healthbenefitexchange.ky.gov/Pages/Summary-of-Benefits-and-Coverage-\(SBC\).aspx](http://healthbenefitexchange.ky.gov/Pages/Summary-of-Benefits-and-Coverage-(SBC).aspx)

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⁷¹ American Academy of Actuaries. (2014). State of Exchanges. Available at: https://www.actuary.org/files/LunchtimeWebinarSeriesStateExchanges_May29.pdf

⁷² Center for Health Workforce Studies. (2016). Oral Health in Kentucky. Available at: http://www.oralhealthworkforce.org/wp-content/uploads/2016/02/Oral_Health_Kentucky_Technical_Report_2016.pdf

⁷³ The 2014 KHIP was conducted from October 8 – November 6, 2014.

⁷⁴ While we have suppressed the estimates of other usual sources of care (e.g., urgent care center, retail store clinic, other) based on National Center for Health Statistics criteria due to concerns about their reliability, we report the estimate for Emergency Departments because of concern in Kentucky about possible overuse of hospital EDs.

⁷⁵ SHADAC. (2017). Quarterly Snapshot: July-September 2016. Available at: <https://www.healthy-ky.org/res/images/resources/FINAL-7th-Quarterly-Snapshot-7.pdf>

⁷⁶ SHADAC. (2015). Issue Brief: ACA Improves Health Insurance Coverage for Kentucky Children. Available at: https://www.healthy-ky.org/res/images/resources/SHADAC_KY-Children-Issue-Brief_Final-10.16.2015.pdf

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⁸⁰ SHADAC. (2015). Quarterly Snapshot: April – June 2015. Available at: https://www.healthy-ky.org/res/images/resources/SHADAC_ACA-Impact-Study_Quarterly-Snapshot-Q22015_0.pdf

⁸¹ SHADAC. (2016). Quarterly Snapshot: July – September 2015. Available at: <https://www.healthy-ky.org/res/images/resources/FINAL-Quarterly-Snapshot-January-2016.pdf>

⁸² SHADAC. (2017). Quarterly Snapshot: July-September 2016. Available at: <https://www.healthy-ky.org/res/images/resources/FINAL-7th-Quarterly-Snapshot-7.pdf>

⁸³ SHADAC. (2016). Annual Report: Study of the Impact of the ACA Implementation in Kentucky. Available at: <https://www.healthy-ky.org/res/images/resources/FINAL-FULL-Annual-Report-2.29-1-.pdf>

