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Health Status and Care Access of the Uninsured in Kentucky

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HEALTH STATUS AND CARE ACCESS OF THE UNINSURED IN KENTUCKY

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the requirements for the degree of
Master of Public Health
in the
University of Kentucky College of Public Health
By
Keith Branham

Lexington, KY
April 15, 2013

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ABSTRACT/EXECUTIVE SUMMARY

With the individual mandate of the Patient Protection and Affordable Care Act (ACA) set to go into effect in 2014, as well as the Medicaid expansion in some states, the federal and state governments have a difficult road ahead planning how to respond to the anticipated increase in health services use. Kentucky is an undecided state regarding the Medicaid expansion and as one of the more impoverished states in the U.S. potentially has much to gain from the new law.

Many studies have focused on the U.S. as a whole in describing the health status of the uninsured. This paper focuses on a state level analysis of the uninsured in Kentucky to give state policy makers, as well as other Kentucky health care workers and organizations, some insight into the population's health status.   Demographic information is also presented to describe the uninsured population and understand how the composition of the uninsured differs from the insured, as well as to give insight into the scope and proportion of health care costs and premiums the federal and state governments will be responsible for in covering the newly insured.

The most recently available data from the American Community Survey (2011) and the Behavioral Risk Factor Surveillance System (2010) are used to describe the demographic makeup and health status of uninsured Kentuckians as compared to the insured. Results indicate that the uninsured have lower levels of access to doctors, checkups and preventive screening; have a higher prevalence of self-reported poor mental health as well as poor or fair self-reported general health; exercise less frequently than the insured; and are more likely to be current smokers. Hispanics, blacks and other racial minorities are more vulnerable to being uninsured, as are the young and less educated. Unemployment is high and full-time work less common

among the uninsured when compared to the insured. Most of the uninsured will qualify either

for Medicaid (if the expansion is taken in Kentucky) or for federal subsidies though the health

exchange after the mandate goes into effect. These results imply that those soon to be insured

are very different and likely less healthy than the currently insured and thus their health services

utilization may be very different as well after ACA implementation.

I. INTRODUCTION

PPACA

The Patient Protection and Affordable Care Act (ACA) was signed into law on March 23, 2010.[4] The ACA marks a major overhaul of health care in the United States. The goal of the act is to expand medical insurance coverage to nearly all Americans and to reduce the overall costs of healthcare.[5] The ACA has been very controversial from the start.[6][7] Many of the provisions, in particular the individual mandate to purchase health insurance and Medicaid expansion, have been met with a great deal of opposition.[6][7] It is not surprising that the battle over the legitimacy of the PPACA made its way to the Supreme Court of the United States (SCOTUS) in the case *National Federation of Independent Business v. Sebelius*.[2] The Court upheld the individual mandate to purchase health insurance as an exercise of Congress's power to tax, given to it by the U.S. Constitution.[2] The Court also found that the Medicaid expansion was not a valid use of Congress's spending power, as states can't be coerced by the federal government into taking the expansion or else risk the loss of existing Medicaid funding from the federal government.[2] This finding meant that if a state declined to accept the Medicaid expansion, the federal government could not reduce Medicaid funds already given to that state, and therefore states now have the power to decide if they want to take the expansion.

The Medicaid expansion, if taken, will expand eligibility to include all adults below age 65 with a household income at or below 138% of the poverty line.[1] The federal government will pay 100% of the additional costs of the expansion for the first 3 years, and slowly stagger the amount down over several years until the federal government pays 90% and the state is responsible for the remaining 10%.[1] If the Medicaid expansion is taken, it is estimated that

329,000 to 424,000 new Kentucky adults will enroll in the program by 2019.[9] Kentucky has not decided on whether or not to accept the expansion, but appears to be leaning toward accepting the expansion if it is determined to be fiscally feasible.[8]

The individual mandate will go into effect beginning January 1, 2014.[1] It requires that nearly every U.S. citizen obtain health insurance or else face a penalty.[1] There are various methods the government plans to use to assist lower income and uninsured individuals in obtaining health care besides the Medicaid expansion. One such method includes subsidizing costs for lower income individuals not covered by the Medicaid expansion with the creation of health insurance exchanges.[1]

The Uninsured

The uninsured population is likely to have multiple unmet medical needs.[11] An Institute of Medicine report from 2009 showed that uninsured adults in the United States are more likely than insured adults to suffer from poor outcomes related to stroke and heart attacks, and are at higher risk for many other negative health effects related to diabetes, cancer, hypertension, and other chronic health conditions[12] With the mandate in place, the majority of these individuals should obtain insurance.[13]

It is probable that many of these previously uninsured individuals will be utilizing government assistance programs such as expanded Medicaid and subsidies through the new health exchanges.[13] The Kaiser Foundation has stated that in 2010 more than half (52%) of the 41.2 million uninsured Americans would be eligible for the expansion.[14] As Kentucky has an average income well below the national average and is considered to be among the most impoverished states in the U.S., it is likely that the same proportion, if not more, of uninsured

Kentuckians would be eligible for the Medicaid expansion if taken in Kentucky.[15][16] A 2011 report on health insurance to the Kentucky Office of Health Policy and Department of Insurance estimated that 330,000 uninsured, non-elderly Kentuckians would qualify for the Medicaid expansion.[17] The report further estimated that of the 263,000 uninsured Kentuckians who will not be eligible for the Medicaid expansion, 87% (229,000) would be eligible for subsidized health insurance coverage through the new health exchanges that will be created.[17] It is likely, given these figures, that the government, state and federal, will be paying for most of the costs that come with trying to insure the uninsured. Given the potential impact this could have on Kentucky's as well as the federal government's budget, the economy, and the health care sector, it is important to understand the demographic makeup and health status of the soon to be insured population.

Many of the uninsured will likely begin to use more health services after obtaining insurance due to their unmet health care needs.[11][18] A recent and ongoing Oregon study found that the health care utilization of newly insured Oregon citizens increased substantially within the first year of obtaining health insurance.[19] The increased use of health services may cause the health care system to become overwhelmed. Understanding what diseases and health issues the newly insured population may be most vulnerable to, as well as which health services will likely be the most utilized, is important for government, non-profit organizations, hospitals and other health care related organizations that plan, implement and budget for health services in order to be able to plan and prepare for the increased use of health services that is sure to follow the full implementation of the PPACA. Understanding the demographic characteristics and health status of the uninsured will help further the knowledge necessary to do the above planning.

Market Failures in Insurance Coverage

A 2010 study conducted at the Urban Institute focused on comparing uninsured adults that will be eligible for the Medicaid expansion to those currently enrolled in Medicaid.[20] The researchers found that the newly eligible group was generally healthier than nondisabled adults already enrolled in Medicaid but that that those who do enroll in Medicaid under the expansion will be more expensive to cover than those who remain uninsured.[20] This finding brings up the concern of adverse selection. It may be that less healthy individuals are more likely to pursue health insurance coverage. This is potentially a problem the health exchanges will face, but will be much less likely to be a problem with those covered by the Medicaid expansion due to the lack of premiums in this group. There may be significant concern about this behavior post-ACA implementation for several reasons.

The penalty for not obtaining health insurance is based on income; lower income individuals will pay a lower penalty if they choose not to obtain health insurance.[1][21] Individuals will pay either a percentage of their taxable income or a flat dollar amount, whichever is greater.[1][21] The minimum individual penalty rates, especially for 2014 and 2015, are likely to be lower than many subsidized individuals' premiums even with government subsidies, $95 for 2014 and $325 for 2015.[1][21] Even if individuals must pay a percentage of their taxable income, which is also phased in at 1%, 2%, and 2.5% of taxable income for years 2014, 2015, and 2016 respectively, this percentage is likely to be less than the percentage of total income they would have to pay for coverage in the health exchange.[1][21] For instance, a single person at 200% of the federal poverty level ($22,980 for an individual using FPL for 2013) would only have to pay a penalty of $324.50 (assuming standard deduction and personal

exemption totaling $10,000) for not obtaining health insurance under 2016 (the year when the highest percent of income penalty goes into effect) guidelines, but if they received a subsidy in the health exchange they would be required to pay $1,447.74 in premium costs (6.3% of income).[1][21][26] Individuals in scenarios such as these may obtain insurance coverage only when they need services and then drop it when they do not need it and pay the penalty, so long as the penalty is lower than their insurance premium, thus minimizing their costs and potentially increasing costs for insurance companies, government funded health care, and individuals keeping insurance consistently.

Catastrophic coverage provided for in the ACA attempts to account for the risk of this tendency by offering cheaper premiums but with high-deductibles. This will likely work only if the premium costs of these catastrophic coverage plans are close enough to the penalty that the targeted young, healthy individuals would pay if they obtained no coverage, thus making the catastrophic coverage a more financially viable option.

Employers will also be seeking to minimize their costs in regard to health coverage for their workers. Employers may seek ways to motivate employees to use the health exchange, government subsidies and/or Medicaid, rather than employer-provided health insurance, in order to shift costs. One way they could go about motivating employees to utilize other health insurance options is to cover on average less than 60% of the costs of coverage for employees or allow the employee share of premiums to exceed 9.5% of their income.[24] This tactic would allow employees to opt out of the employer provided health care and use the health exchanges or Medicaid if they qualify. Employers may be required to pay penalties if they do this, but if the penalties are less expensive than covering the employees, they may opt for the described option.[24] They could also choose not to cover employees at all and pay the penalty if it is in

their best financial interest.[25] It is also important to note that employers are only required to provide insurance that covers at least 60% of medical costs.[1][21][26] The low coverage percentage will present great barriers to those employees with this level of coverage as having to pay out of pocket 40% of medical expenses is still a significant amount given the high costs of health care. Those who need major medical care will be the most affected by this.

These issues are of concern due to the potential unexpected costs they may cause and due to the incomplete knowledge we have of how the health insurance landscape will change once the ACA is fully implemented. I discuss these points in detail in order to bring attention to the many factors that we are unsure about in regard to what the health care system will actually look like years after the ACA implementation and therefore the need to understand the soon-to-be-insured population with as much detail as we can obtain.

Purpose

The goal of this investigation is to describe similarities and differences in demographic, health status, and health care access between the uninsured and insured in Kentucky. There have been multiple studies that have described the uninsured across the United States as well as uninsured Kentuckians.[17][28][29][30] A study published in 2000 by Dr. John Ayanian and colleagues showed that long-term uninsured adults in the United States are less likely than insured adults to have had routine checkups within the last two years, as well as to have deficits in cancer screening, cardiovascular risk reduction, and diabetes.[30] A University of Kentucky study completed in 2011 described, in great detail, many demographic characteristics of uninsured Kentuckians using the Current Population Survey (CPS) and the American Community Survey (ACS).[17] The American Community Survey (ACS) is an annual survey

that provides information on a wide spectrum of demographic and other characteristics.[10] The ACS data used for the 2011 study were from 2010. I intend to use ACS data from 2011 to emulate some of the descriptive statistics of this study and compare the demographic characteristics of the uninsured to those of the insured among Kentuckians.

I will use the 2010 Behavioral Risk Factor Surveillance System (BRFSS) data from Kentucky to compare the uninsured and insured across several different health status and health care access factors. The BRFSS is a state-based survey taken annually that provides information on various health behaviors and other health related fators.[3] These comparisons will help to identify areas of likely unmet health care need among currently uninsured Kentuckians that may cause an increase in the use of health services after the individual mandate, and potentially the Medicaid expansion, go into effect. Many of the other studies consider the United States as a whole or lack sufficient detail on the health status of the uninsured in Kentucky independently.[14][18][27][28][30] As health status can vary across states, it may be beneficial for Kentucky health care decision makers to understand what the health status is for uninsured Kentuckians specifically.[51][52]

Hypotheses & Expectations

I expect the uninsured to have lower health care access than the insured.   Given the lack of health care access due to lack of health insurance coverage, I postulate that the uninsured will likely have not received much of the preventative care necessary to prevent various health conditions and for their health status to be worse than that of the insured. I expect the health behavior of the uninsured to be more risky than that of the insured, possibly due to lack of education and lack of exposure to health professionals. I also expect to find that the uninsured

have lower income and less education than their insured counterparts. This seems obvious given that lower income individuals are less likely to be able to obtain health insurance and lower education is linked to lower income.[53]

II. METHODS

Demographic Data

The American Community Survey (ACS) was used to describe and compare the demographic information of uninsured and insured Kentuckians.[10] I used the online American Fact Finder tool on the ACS website to search for the data I needed. I used the single-year estimates for 2011, geographical location: Kentucky. I divided the samples into uninsured and insured, restricting age 18-64 years. Individuals aged 65 and older were omitted due to their automatic coverage by Medicare.

Variables selected were: age distribution, education, employment status, gender, race, ratio of income to poverty level, and work experience. Age was further stratified by gender due to the way the data from the ACS were presented in the American Fact Finder tool. All data collected and calculated can be found in **APPENDIX A**. The online tool provided population estimates and margins of error for these estimates. I described the uninsured by calculating their distributed among each variable using percentages, this was also calculated for the insured; these percentages are compared in **Table 1** and described further in the results section of this paper. In order to further describe the data, figures were created to display employment status, work

experience, race, and ratio of income to poverty level. These figures are described in the results section as well.

Health Status Data

The Behavioral Risk Factor Surveillance System (BFRSS) was used to describe the health status of uninsured and insured Kentuckians.[3] Age was restricted to 18-64 here as well. To gather and analyze the data I used the Web Enabled Analysis Tool (WEAT) on the BFRSS website. I used the tool to do cross tabulations for various variables of interest separated into groups by health insurance coverage status. The tool provided a great deal of information: sample sizes, weighted samples (population estimates), percentages, standard errors and confidence intervals for weighted sample and percentages, chi-square values, p-values, and missing data. All of the data collected can be found in **APPEDICES B1 & B2**. Percentages and p-values are reported and compared in **Table 2**, which is described in the results section of this paper. Figures for self-reported health status and length of time since last health checkup were also created to further describe the data. These are described in the results section as well.

Health Status Variables

Selection of health status variables was complicated due to the various ways the data could be viewed. I decided to keep all the variables binary with one exception, length of time since last check-up. I did this in order so that the chi-square and p-values calculated would be more meaningful. The exception was due to the fact that the data for length of time since last checkup were much more useful and explanatory when multiple categories were allowed. I further broke the variables in three sections: health status, health care access, and health

behavior. Health status variables were variables that described the physical or mental condition of the sample. Health care access variables were variables that described the sample's access to doctors, check-ups, and certain health screening services. Health behavior variables were variables that described behaviors of the sample that may impact their health.

Six health status variables were selected:

1. Body Mass Index (BMI)

2. Cardiovascular Disease (diagnosis with Angina or Coronary Heart Disease)

3. Diabetes (ever told excluding pregnancy)

4. Frequency of Poor Mental Health (in past month)

5. Frequency of Poor Physical Health (in past month)

6. General Health (Poor/Fair vs. Good or better)

BMI was selected because it is a strong predictor of future chronic disease risk and health care expenditures. The sample was divided into normal weight (BMI <25) and overweight/obese categories (BMI >=25). Data on individuals who were underweight was not available with the methods used in this study and therefore the study was limited to grouping together all those with BMI <25. Cardiovascular disease and diabetes were selected because together with cancer, they are associated with approximately two thirds of all deaths in the US and the costs due to these are in the hundreds of billions.[33][49] There were several cardiovascular disease variables to select from; I chose the one referencing coronary heart disease, as well as Angina, as it is the most common type of cardiovascular disease.[34]

The self-reported health status variables frequency of poor mental health, frequency of poor physical health, and general health were selected because self-rated health has been linked to several negative health and economic conditions/behaviors. A 2004 study from Israel described current smoking, higher systolic blood pressure, use of chronic medications, diabetes, lower education status, lack of regular leisure sports activity as significant predictors of poorer self-evaluated health.[35] A 2006 study from Mayo Clinic linked self-rated health to frequent mental distress, current smoking and health confidence.[36] There was also a study from 2004 by Dr. James Rohrer that indicated that those who self-reported themselves as feeling "blue or downhearted" were associated with an increased level of medical visits.[37] These studies show that self-reported health can be a somewhat accurate indicator for overall health condition and is worth considering in analysis.

Six health care access variables were selected:

1. Colorectal Cancer Screening (individuals age 50-64 who have had a Colonoscopy or Sigmoidoscopy)

2. Couldn't see a doctor because of cost

3. Length of time since last check-up

4. Prostate Cancer Screening (Men age 40+ that have had a Prostate-Specific Antigen [PSA] test in past 2 years)

5. Women that have had a pap smear test in past 3 years

6. Women age 40+ that have had a mammogram in past 2 years

"Couldn't see a doctor because of cost" and "length of time since last check-up" were selected to indicate barriers to receiving health care. The colonoscopy/sigmoidoscopy variable was selected because colon cancer is the second leading cause of cancer related deaths in the U.S. and it is a very treatable and curable condition if detected early.[38] Ages 50-64 were utilized because 90% of colon cancer cases occur after age 50 and this is the age usually recommended that most people begin regular screening.[23][38]

A study published in 2009, conducted by the UCLA Department of Urology and Jonsson Comprehensive Cancer Center, found that under-detection and under-treatment of prostate cancer is still a significant concern for low-income, uninsured males.[39] Of organizations that recommend PSAs, they generally recommend men have them between ages 40-75.[40] For these two reasons, I selected the prostate cancer screening variable. I selected the pap-smear variable because triennial pap-smear screening has been shown to be very cost-effective means of testing for the human papillomavirus (HPV), which is almost sole cause of cervical cancer in women.[41][54] Finally, the mammogram variable was selected because breast cancer is the most common type of cancer among women and most women's health organizations recommend women receive annual or biennial mammograms starting at age 40.[42][43]

Three health behavior variables were selected:

1. Heavy consumption of alcohol (defined as women who reported drinking more than one, and men who reported drinking more than two, alcoholic beverage per day on average)

2. Exercise within the last 30 days (grouped into two groups, yes and no, based on response to question, "have you exercised within the past 30 days?")

3. Smoking status (grouped based on self-reported smoking status as either a current smoker or former/never smoker)

Heavy alcohol consumption was selected because it has been linked with increased risk of liver disease, cancer, brain damage and other negative health outcomes.[44] Regular exercise is linked with several positive health effects including improved weight maintenance, lower blood pressure, and decreased risk of cardiovascular disease, so it makes a good indicator for health status.[45] Tobacco smoking status was selected because it has been linked to many bad health conditions including various neurological, cardiovascular and pulmonary diseases.[46] Former smokers and those who had never smoked were grouped together because it was impossible to discern how often former smokers smoked as well as when they quit.

The negative behavior in each of these categories may be higher among the uninsured for several reasons. Due to lack of access to facilities and locations because of low socioeconomic status, the uninsured may have less opportunity to exercise.[55] Also, cultural factors and lack of education on the reality of the dangers of smoking, drinking excessive alcohol, and not exercising regularly may play a role in making the uninsured vulnerable to these behaviors.[47][48] Though they may be aware to some degree that these things are "bad" for them in general, they may not be aware of the actual consequences they may face due these behaviors and the likelihood of their occurring. Cultural factors may also influence attitudes toward dangerous health behaviors.

Analysis

The ACS demographic data were compared using percentages rather than the actual numeric values in order to be able to more easily compare the uninsured and the insured. The weighted sample size and margins of error were the only information obtained from the ACS Fact Finder tool and therefore I could not calculate significance. I chose to describe the observable differences in the percentages in the results section of this paper as well as provide the information in **Table 1**. The weighted sample size and margins of error are provided in **APPENDIX A**.

The BRFSS data on health status and care access obtained from the WEAT tool were also used to calculate percentages for the same comparison purposes mentioned above. P-values provided through the WEAT tool were used to determine significance. An alpha of 0.05 or lower was required to be considered significant in this paper, although most significance levels were below the 0.01 level. The percentages and p-values are described in the results section and presented in Table 2. All other data was compiled and organized and is presented in **APPENDICES B1 & B2**.

III. RESULTS

Demographics of the Uninsured

The data from the 2011 ACS indicates that approximately 20.6% of Kentucky adults age 18-64 are uninsured. There were approximately 550,000 uninsured Kentuckians age 18-64 in 2011, and approximately 2, 140, 000 insured Kentuckians age 18-64 in 2011. **Table 1** describes

the demographic information obtained from the 2011 1 year estimates of the American

Community Survey. Uninsured males and females were both found to be younger on average

than the insured. Half (50.4%) of uninsured males in the study were under age 35, while only

31.4 % of the insured were in this age group. Female age distribution was similar, with 46.5% of

uninsured females falling between ages 18-34, and 32.6% of insured females in this age

category. **Figure 1** provides a visual representation of these data. Gender varied by a few

percentage points, with males making up 52% of the uninsured population and females making

up 52% of the insured.

Education levels were only calculated for 25-64 year olds, due to the increased likelihood

of many 18-24 year olds to still be working toward their education in some way. The education

levels were starkly different, with almost one quarter (23.4%) of the uninsured not graduating

high school, while the figure was only 10.5% for the insured. While 35.4% of the uninsured had

some type of college education, only 7.8% possessed at least a bachelor's degree. In contrast,

57.8% of the insured were likely to possess some college education, and 26.8% had at least a

bachelor's degree.

Figure 2 compares the unemployment rates of those in the labor force. Over one in four

(26.2%) of the uninsured were unemployed, while only 6.3% of the insured were unemployed. It

is interesting to note that the proportion of uninsured and insured not in the labor force were

similar, with 29.1% and 27.5% respectively. **Figure 3** compares the work level of those who

worked in 2011. Only 40% of uninsured workers worked full-time, year round; while 67.9% of

insured workers had full-time jobs, year round.

Figure 4 describes differences between insurance rates among different races. All

groups were more likely to be uninsured than non-Hispanic whites except for Asians, who fell

slightly below the 19% uninsured rate of non-Hispanic whites with a 17.6% uninsured rate.

Blacks and Hispanics were particularly vulnerable, with uninsured rates of 29.1% and 48.9%.

Table 1 reinforces this difference by showing that Blacks and Hispanics make up 11.2% and

6.2% of the uninsured respectively, while only making up 7% and 1.7% of the insured

respectively. Non-Hispanic whites are shown to make up 80.5% of the uninsured and 89 % of

the insured.

 Figure 5 shows the ratio of income to poverty level of the uninsured and insured. Half

(50.4%) of the uninsured are under 1.38 times the federal poverty level (FPL), meaning they will

likely be eligible for Medicaid. Most other (41.2%) uninsured fall between 1.38 and 3.99 the

FPL, which is the range for eligibility for federal subsidies in the health exchange. Only 8.4% of

the uninsured are at or above 4.0 of the FPL and therefore will not qualify for Medicaid or

federal subsidies. In contrast, only 18.6% of the insured fall under 1.38 the FPL and 43.2% fall

between 1.38 and 3.99 of the FPL. This may cause some shifting of privately insured individuals

to the government assisted health insurance market, especially in the 1.38 to 3.99 range.

Health Status of the Uninsured

 Table 2 compares various health status, health care access, and health behavior variables

of the uninsured and insured in Kentucky. There appears to be no statistically significant

difference in BMI or Angina/Coronary Heart Disease between the uninsured and insured, though

the small prevalence of Angina/Coronary Heart Disease as compared to other categories may

have made an effect difficult to detect. Also, the younger average age of the uninsured makes

them likely to have developed chronic diseases than the insured. The similarity in at risk BMI

($>= 25$) in the uninsured (68.1%) and insured (68.2%) could indicate that weight is an issue

regardless of insurance coverage, indicating even with more health care, obesity is not being reduced. It may also be the protective effect of smoking against BMI that causes these figures to appear the same, as the uninsured are younger and more likely to smoke that the insured. There is evidence that the insured have been more informed of their diabetes condition (8.4%) than the uninsured (5.5%).

Figure 6 describes self-reported health of uninsured and insured individuals. There were statistically significant differences between rates of self-reported poor mental health, as well as fair or poor general health in the uninsured and insured. While 23.4% of the uninsured reported more than 14 days of poor mental health in the previous month, only 13.4% of the insured reported the same. Fair or poor mental health was reported by 24.5% of the uninsured and 17.3% of the insured. There was no statistically significant difference in self-reported poor physical health between the uninsured (16.2%) and the insured (13.3%).

More than half of the uninsured (55.2%) reported not being able to see a doctor because of cost, while 10.5% of the insured reported this. Figure 7 describes the length of time since last checkup in the uninsured and insured. Nearly two-thirds (65.4%) of the insured had seen a doctor within the last year, while only 31.6% of the uninsured had seen a doctor within the same time interval. More strikingly, 31.1% of the uninsured had either never seen a doctor or not seen one within the last 5 years, while this was true for only 10.1% of the insured.

Preventive screening was consistently lower among the uninsured across the four measures of screening frequency, with all differences being statistically significant with p-values of < .0001. Only 29.8% of uninsured men age 50-64 had ever had colonoscopy or sigmoidoscopy, while 62.4% of insured men have had the procedure. Nearly half (47.1%) of insured men had a prostate-specific antigen (PSA) test in the last two years, while only 14.1%

uninsured men had the screening within the last two years. This may actually be beneficial to the

uninsured as it has been argued that the PSA is a low-value test that may actually cause more

harm than benefit to most men. While 28% of uninsured women had not received a pap smear

within the past 3 years, only 13.3% of insured women had not had the procedure in the past 3

years. A total of 42.7% of uninsured women and 73.6% of insured women age 40+ had a

mammogram within the past two years.

Heavy consumption of alcohol was not found to be statistically different in the uninsured

(5.6%) and insured (4%), indicating similar drinking rates among the uninsured and insured.

The uninsured were statistically more likely to be current smokers (49.2%) than the insured

(22.7%). The uninsured were also statistically less likely to have exercised than the insured, with

32% of uninsured and 25.8% of the insured not exercising in the last thirty days.

IV. DISCUSSION & IMPLICATIONS

Demographics Discussion

The data from the 2011 ACS indicates that approximately 20.6 % of Kentucky adults age

18-64 are uninsured. These findings are consistent with the findings of the 2011 report to the

Kentucky Office of Health Policy, which found an uninsured rate of 21% in Kentuckians

between ages 19-64.[17] The results of the study also indicate that the young and the less educated

are less likely to have health insurance. These indications appear to be reasonable as the young

and less educated are less likely to have stable employment and employer provided health

insurance. Also, Hispanics and Blacks are statistically less likely to have health insurance than

non-Hispanic whites. Disparities in health among races have been well documented and these findings are no surprise.[50] It is likely that non-white racial groups, especially Hispanics and Blacks, will benefit proportionally more from the health care expansion. The differences in gender makeup of the uninsured (52% male, 48% female) are very small but could be due to the fact that pregnant women in Kentucky that have income below 185% FPL are eligible for Medicaid.[31] It may also be due to chance given the small difference and the lack of a statistical significance test.

Unemployment rates are far greater in the uninsured than the insured (26.2% vs. 6.3%). These differences are not surprising given the unemployed are likely to face greater difficulty obtaining health insurance than those with employment due to lack of a steady income source and lack of employer-sponsored health insurance options. Of the working portion of the uninsured, only 40% had full-time work, year round. The lack in full-time work may be partially explained by the fact that many employers do not provide sponsored health insurance to part-time workers. This tendency of employers is unlikely to change with the ACA because the Act does not require employers to provide sponsored health insurance to part-time workers, only those considered full-time.[26] Some of the coverage issues may be mediated to a degree with the ACA definition of a full-time worker as anyone working 30 hours or more per week as well as with the health exchanges and federal subsidies of which many of these part-time workers will likely qualify.[22] Concern has also been expressed that employers will manipulate workers' hours after the new requirements go into effect in order to keep employees under 30 hours worked per week and therefore categorized as part-time.

At least half of the uninsured (50.4%) will likely qualify for the Medicaid expansion and another 40.6% will possibly qualify for federal subsidies. The high degree of aid eligibility

indicates that the government will be picking up a significant proportion of the bill with the health care expansion. The governmental responsibility to cover the new health care coverage costs has implications on potential need for tax increases in the future. The goal of the ACA is to lower health care costs by increasing preventive care and decreasing unnecessary care like emergency room visits and treatment for preventable conditions. In order to pay for expanded coverage, some individuals will likely end up paying more and benefiting less, while others pay less and benefit more. It is possible, whether through increased premiums or increased taxes, that the young and the wealthy will subsidize the poor and the old even more so than in previous insurance schemes. Poor uninsured individuals will obtain Medicaid or tax credits which are paid for through taxes. Uninsured older individuals are less healthy than young and will utilize health services more than the young and therefore benefit more from health insurance coverage expansion. However, the young are far more likely to qualify for Medicaid or subsidies, which may offset their subsidization to some degree.

The counter-argument is that subsidizing already occurs and in the long run the ACA will reduce health care costs and therefore save money for taxpayers as well as those who pay the costs of their health insurance premiums. Those without insurance may be more likely to allow their health conditions to evolve to a degree where treatment is significantly more expensive than if they had sought treatment when symptoms first presented. In addition, utilization of the emergency room in cases where a much cheaper doctor's visit or other preventive measure would be sufficient to treat the ailment also drives up the costs to taxpayers and those who pay the costs of their health insurance premiums. Due to their financial situation, the uninsured in these scenarios will likely not pay the hospital bills they incur and some much of these costs are covered by the Disproportionate Share Program (DSH), which means they are passed along to

the taxpayer.[32] It is also important to note that DSH is scheduled to be phased out under the

ACA. It remains to be seen which argument will prove true, but there will be many

opportunities for research post-ACA to attempt to determine these effects and their

consequences.

Health Status Discussion

Much of the results for health status, care access and behavior were as expected. The

uninsured generally appeared to have larger access problems and increased health concerns than

the insured. The fact that being overweight or obese is equally as likely in the insured and

uninsured, as well as the significant proportion that the overweight and obese account for in both

groups (68.1% in the uninsured and 68.2% in the insured), emphasizes the significance of the

weight issue in Kentucky, and across the country. The similarity between the groups may be in

part due to the younger age of the uninsured. Tobacco use is higher in the young, and tobacco

use has a protective effect against obesity.   So it may be that the higher smoking rates among the

uninsured as well as their age are skewing the figures. If we accounted for smoking as well as

age, it may be that we would find higher obesity rates among the uninsured.

The lower rate of known diabetes diagnosis in the uninsured (5.5% vs. 8.4% in insured)

indicates that there may be many uninsured individuals that are unaware of their diabetes status.

The lack of significant difference in Angina/Coronary Heart Disease could be due to having too

small a sample size to detect the difference or that these conditions are similar to BMI and

prevalence is consistent regardless of insurance coverage. It may also be the fact that the

uninsured are on average younger than the insured and conditions such as diabetes and heart

disease are far more prevalent in the old than the young.

The lack of significance in the frequency of poor physical health in the uninsured and insured may be confounded or biased by not accounting for other factors such as level of physical activity, job type, level of risk aversion, etc. The increased likelihood of poor mental health in the uninsured could be explained in part by their higher occurrence of financial worries and stresses than the insured due to their lower socioeconomic status. Other potential explanations could be decreased job satisfaction, as well as overall lower satisfaction in their life in general. The poorer mental health status may mean that health services providers and funding need to be targeted toward providing more mental health services for the newly insured population. The uninsured were also found to be more likely to have poor/fair general health than the insured. This could be partially explained by their lack of health care access to doctors and screenings, as well as their increased propensity for certain negative health behaviors such as smoking and lack of exercise.

The uninsured were consistently shown to have less access to screening preventive measures such as mammograms and colonoscopies. The decreased access implies that there may be many undiagnosed conditions among the uninsured that will come to light once the individuals are insured. These conditions may be more advanced and therefore more costly to treat than they would have been had the individuals been screened earlier. Sharp increase in incidence of various diseases in the first few years after the individual mandate and Medicaid expansion go into effect may also be a result of the lack of screening in the uninsured. It will be important for health leaders to increase ease and availability of many screening procedures to attempt to diagnoses as early as possible the health conditions that the newly insured have neglected. One way to do this could be educating those that help enroll the newly ensured on what screening procedures should be targeted at what groups within the newly insured. The

enrollers could inform the new enrollees of what screenings they should pursue upon obtaining their insurance. A pamphlet could also be created that describes different screenings available, the importance of each, and the age, frequency, and by whom each screening should be pursued. The pamphlets could be handed out or mailed to all newly insured.

Access to doctors and checkups was also significantly lower in the uninsured. If these disparities are eliminated (or mostly eliminated) with the implementation of the ACA and preventive measures such as screenings and regular checkups become the norm among all (or at least almost all) citizens, there could be a reduction in costly treatment that is worthwhile not only for the health of citizens, but also for the overall costs of health care to everyone. Creating a system where more providers are willing to accept Medicaid will be important in order to allow easier access to the newly insured. If the newly insured have insurance but it is difficult to find a doctor that is willing to take their insurance, they may give up and simply not seek the treatment they need until their condition(s) worsen.

The lower levels of exercise among the uninsured go along with other previously held findings. The uninsured have generally lower socioeconomic status than the insured and lower socioeconomic groups generally have less access to places to exercise.[55] The situation may change with PPACA implementation if education by health care specialists about the importance of regular exercise actually influences the newly insured to exercise more. It will also be important to improve accessibility to places to walk safely and exercise to those with lower socioeconomic status, as this group comprises a large portion of the uninsured. The difference is only moderate though, with 25.8% of the insured and 32% of the uninsured having not exercised in the previous 30 days.

The lack of difference in alcohol consumption among the uninsured and insured could be due to the arbitrary definition of "heavy alcohol consumption" and therefore inherent bias in the study when individuals are grouped only based on the response to this question. Heavy alcohol consumption was defined in the survey as men having more than two drinks per day and women having more than one drink per day on average. The behaviors and drinking habits of individuals in these groups may be starkly different and therefore shouldn't be looked at as a single group. For instance, with the above definition, an insured woman who has a glass of wine or two after work each day would be grouped with an insured man who goes to a bar and drinks until he passes out nearly every evening. In contrast, an uninsured male who never drinks would be in the same category and an uninsured female who drinks heavily on Saturday and Sunday, but does not drink through the week, and therefore does not consider herself to have "on average" more than one drink per day because most days she doesn't drink. It could also be that there just isn't a difference in heavy drinking between the uninsured and insured, but further studies more precisely accounting for the diverse ways in which individuals drink as well as other factors would be needed to discern this.

The significantly increased levels of smoking among the uninsured (49.2% vs. 22.7% in the insured) were not surprising but much greater than anticipated. Nearly half of the soon-to-be-insured population currently smoke and therefore will have many of the health problems and concerns associated with that behavior. This could be of particular concern if health care providers and workers are unable to change the smoking behavior after individuals in this group are insured. Inability to change this behavior may occur if the increased levels of smoking are not due to the fact that they are uninsured but instead due to other factors that are likely to stay the same after the PPACA implementation, factors such as socioeconomic status and age. The

result may be a significant increase in the services used for treatment of smoking related disease and health consequences. Increasing anti-smoking programs as well as access, knowledge and availability of treatments such as nicotine patches and gum may provide some benefit to the problem. If even a small decrease in the adult soon-to-be-insured population's smoking habits can be made, this may influence future generations and decrease smoking in the younger generation. It will be important to understand the cause of the heightened smoking in the uninsured in order to know how to approach the problem of decreasing the high rate.

Limitations

The design of the study, assessing Kentucky as a whole, limited its findings because the many rural regions of Kentucky are very different from areas such as Lexington and Louisville, and therefore there may be different barriers to health care access and variation in health concerns across different regions. Also, family size and number of dependents were not considered and as these factors likely influence whether or not subsidized health insurance is obtained or not, due to the additional costs of family premiums as well as the eligibility rules that change with having children. It may be beneficial to look at these factors in future research.

This study was also restricted by the information that the surveys provided and the access to that data through the tools used for the data analysis. The Web Enabled Analysis Tool (WEAT) provided by the BRFSS website was used to analyze the BRFSS data on health status. The way that questions were asked during the survey and presented through the tool restricted the variables that were available. For the ACS data analysis on demographic information, the American Fact Finder available on the ACS website was used. This restricted the study to the available information presented in the tables that were obtained through this tool. The tables are

predetermined so if certain characteristics were unavailable for uninsured Kentuckians, that information was not included in this paper.

Self-reported data has a weakness in that it is based upon each subject's viewpoint. Bias may be introduced because there is not a strict definition of what is or isn't poor health, causing individuals to be placed in the same group based on different criteria. Also, individuals may be reluctant to admit behaviors they know are negative, such as smoking or excessive alcohol consumption and this could lead to underestimating of these numbers. These biases are likely to be similar in both the uninsured and insured. The sample size is also limited due to the restrictions of eligibility to be included in the analysis/study (i.e. Kentucky resident and age 18-64). Some of the variables that have lower prevalence values may require a larger sample size to detect a statistically significant difference. Finally, only allowing two response groups for most of the variables caused some loss of data. For instance, former and never smokers were grouped together, as well as underweight and normal weight individuals. Further, more detailed studies may give more accurate descriptions of differences among these variables in the uninsured and insured.

Recommendations & Future Research

With the implementation of the ACA, the potential for impact studies in health policy is significant. Financial, economic, health, and many other consequences of the ACA are likely to be studied extensively over the next several years. This study opens up the question of how the differences in health status among the uninsured and insured may translate into changes in health services utilization after the individual mandate and possibly the Medicaid expansion go into effect in Kentucky. The newly insured will be an interesting group to study in regard to health

improvement measures. A vast number of health status categories could be monitored for improvement over time. This would help in evaluating the effectiveness of various ACA policies. Doing so would require that investigators distinguish the newly insured from the previously insured. It may be a good idea for surveys such as the ACS and the BRFSS to consider this when creating survey questions for 2014 and beyond.

Helping community health agencies prepare for the newly insured will be essential in order to make the health care expansion successful. Given the high prevalence of poor mental health and the fact that mental health service access is deficient across Kentucky, it will be important to inventory the availability of these services across the state and estimate the increase in demand that will come from the newly insured. This assessment may assist state health leaders to target and increase availability of these services in the regions with the greatest need. It will also be important to ensure the availability of primary care doctors and preventive screenings across the state. These services are likely to face the greatest access problems in rural regions, which make up much of Kentucky's geography and contain a significant portion of the population. Finding ways to improve access to preventive screenings, primary care and behavioral health for the newly insured will be important to improving their health.

Due to the significance of these findings, it is important to note how the ACA addresses improved access in rural regions. The ACA provides increased funding to create new community health centers in underserved areas, increase the health care workforce in rural regions through scholarships, loan repayments, and other incentives, and expand tele-health. These all address health care access by improving the quantity of services available in rural regions. One concern not addressed by the ACA is that there is no entity or organization that is responsible for ensuring the improved access to health care in Kentucky or any state. The lack of

a network or agency that ties health services agencies together and works with them in an effort to improve access may decrease the success of expanded health care. The National Health Planning & Resource Development Act of 1974 attempted to address this problem by creating a network of health planning, regulation and evaluation that connected regional, state and federal governments and health agencies. The Act was repealed though in 1986 due to anti-regulatory pressure during the time. It may be beneficial to take some guidance from the Act and create a state level agency that has a primary goal to investigate where health care access barriers occur and then work toward improving them. This agency could assist in coordinating with local health agencies across the state to work together to provide the best network of health services possible and ensure these services actually reach the population.

Initial enrollment in health insurance offers a great opportunity to educate and link the newly insured to key health services. It will be important to make the enrollment process as easy and simple as possible in order to promote the highest levels of participation. Depending on the method of enrollment, pamphlets, other physical or electronic materials, or even verbal communication could be used to educate the newly ensured about what preventive screenings they may need and where to get them. This will also provide an opportunity to provide information on other health services available in their community, availability of exercise options, and smoking cessation.

Finally, it will be beneficial to link the newly insured to primary care physicians, possibly even assisting in setting up initial visits. Doing so would be beneficial in ensuring that the newly ensured receive an overall physical evaluation and likely many of the screening measures that they are recommended to have, as well as gain other valuable medical advice from their new primary care doctor. Immediate connection with primary care could help avoid use of specialists

when they are not necessary by having a primary care physician serve as the initial medical contact and "gate keeper" in a sense to the patient. This could prevent unnecessary spending as well as allow for earlier detection of diseases.

Summary

This study indicates that the uninsured have lower levels of access to doctors, checkups and preventive screening than the insured. The evidence also indicates that the uninsured have a higher incidence of self-reported poor mental health as well as poor or fair self-reported general health. The uninsured also appear to exercise less frequently than the insured and are significantly more likely to be current smokers. Hispanics, blacks and other racial minorities are more vulnerable to being uninsured, as are the young and less educated. Unemployment is high and full-time work less common among the uninsured when compared to the insured. Most of the uninsured will qualify for either Medicaid, if the expansion is adopted in Kentucky, or federal subsidies though the health exchange after the mandate goes into effect.

The implementation of the ACA including the individual mandate and potential Medicaid expansion should improve some of the negative health situations. Many health services are likely to become crowded, after implementation, especially those with services related to the negative health conditions and behaviors that the currently uninsured are most vulnerable to such as smoking and poor self-reported mental health. It will be important to monitor and, where possible, anticipate the level of services that will be needed to cover the newly insured population. If access can be improved and negative health behaviors changed among the newly insured, prices should eventually decrease, creating an improved, lower cost health system.

V. TABLES & FIGURES

TABLE 1. Descriptive statistics of uninsured and insured Kentuckians, age 18-64

	Uninsured (%)	Insured (%)
Age Distribution (Male 18-64)		
18 to 24	21.5	13.8
25 to 34	28.9	17.6
35 to 44	21	20.6
45 to 54	19.3	24.5
55 to 64	9.4	23.4
Age Distribution (Female 18-64)		
18 to 24	19.3	13.8
25 to 34	27.2	18.8
35 to 44	20.7	20.4
45 to 54	19.2	24.5
55 to 64	13.7	22.5
Education (25 - 64 years old)		
Less than High School	23.4	10.5
High School Graduate	41.2	31.8
Some College/Associate's Degree	27.6	31
Bachelor's Degree or Higher	7.8	26.8
Employment Status		
Unemployed	18.6 (26.2)*	4.6 (6.3)*
Employed	52.3 (73.8)*	67.9 (93.7)*
Not in Labor Force	29.1	27.5
Gender		
Male	52	48
Female	48	52
Race		
White	84.1	90
Black	11.2	7
Asian	1	1.2
American Indian/Alaska Native	0.3	0.2
Other Race	2	0.5
Two or More Races	1.4	1
*Hispanic** *	6.2	1.7
*White (Non-Hispanic)*** *	80.5	89
Ratio of Income to Poverty Level (Past 12 months)		
Under 1.38 of poverty threshold	50.4	18.6
1.38 to 1.99 of poverty threshold	16.3	9.8
2.00 to 3.99 of poverty threshold	25	33.3
4.00 or more of poverty threshold	8.4	38.2
Work Experience		
Worked Full-Time, Year Round	26.9	50.2
Worked Less than Full-Time, Year Round	40.6	23.7
Did Not Work	32.5	26

Note: Percentage values are for columns; i.e. percentage of total uninsured or insured respectively

* Values in parenthesis are percentages when those not in labor force are excluded, this effectively gives an estimate of employment/unemployment rates

**All those identifying as hispanic, regardless of race; this total is made up of portions of other racial categories

***This is a subportion of the "White" category that excludes those identifying as white and hispanic

TABLE 2. Health status, care access and behavior statistics of uninsured and insured Kentuckians, age 18-64
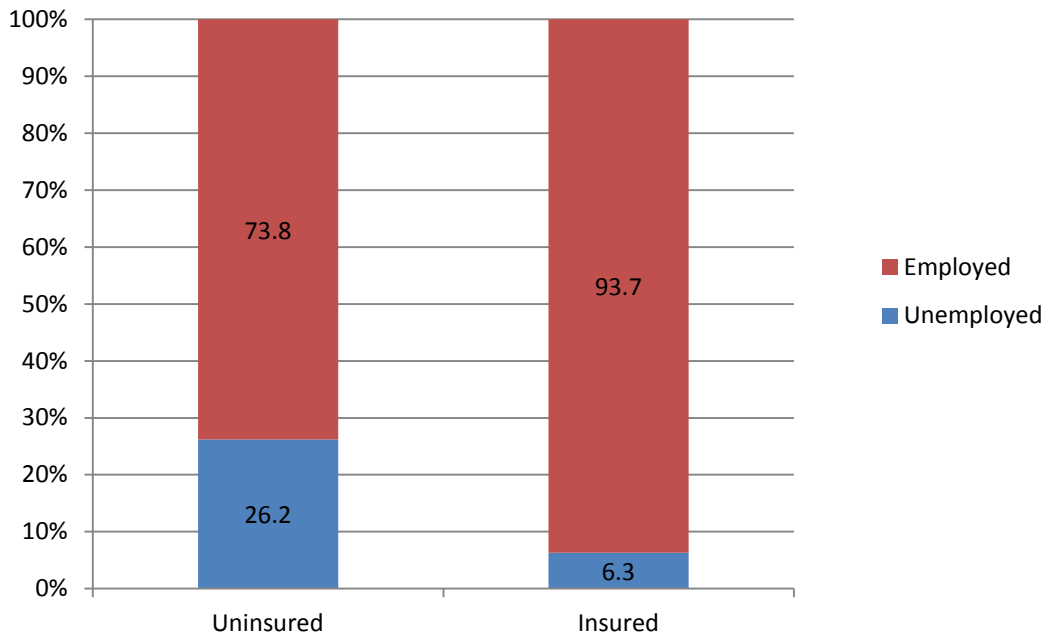
	Uninsured (%)	Insured (%)	p-value
HEALTH STATUS			
BMI			
<25 (Normal Weight)	31.9	31.8	0.991
BMI >= 25 (Overweight or Obese)	68.1	68.2	
Cardiovascular Disease (Angina/Coronery HD)			
No	96.7	96	0.357
Yes	3.3	4	
Diabetes (Ever told excluding pregnancy)			
No	94.5	91.6	0.007
Yes	5.5	8.4	
Frequency of Poor Mental Health (In past month)			
Not Frequent (Less than 14 days)	76.6	86.6	<0.0001
Frequent (14 or more days)	23.4	13.4	
Frequency of Poor Physical Health (In past month)			
Not Frequent (Less than 14 days)	83.8	86.7	0.156
Frequent (14 or more days)	16.2	13.3	
General Health			
Poor/Fair	24.5	17.3	0.002
Good or better	75.5	82.7	
HEALTH CARE ACCESS			
Couldn't see a doctor because of cost			
No (False)	44.8	89.5	<0.0001
Yes (True)	55.2	10.5	
Length of time since last checkup			
1 Years or Less	31.6	65.4	<0.0001
1-2 Years	15	15	
2-5 Years	22.2	9.6	
More than 5 years	27.6	8.4	
Never	3.5	1.7	
Colorectal Cancer Screening (50-64 Colonoscopy)			
No	70.2	37.6	<.0001
Yes	29.8	62.4	
Prostate Cancer Screening (Men 40+ PSA past 2 years)			
No	85.9	52.9	<0.0001
Yes	14.1	47.1	
Women's Health: 18+ pap test in past 3 years			
No	28	13.3	0.0001
Yes	72	86.7	
Women's Health: 40+ mammogram in past 2 years			
No	57.3	26.4	<0.0001
Yes	42.7	73.6	
HEALTH BEHAVIOR			
Alcohol Heavy Consumption			
No	94.4	96	0.211
Yes	5.6	4	
Exercise (Last 30 Days)			
No	32	25.8	0.014
Yes	68	74.2	
Smoking Status			
Former/Never	50.8	77.3	<0.0001
Current	49.2	22.7	

Note: Percentage values are for columns; i.e. percentage of total uninsured or insured respectively
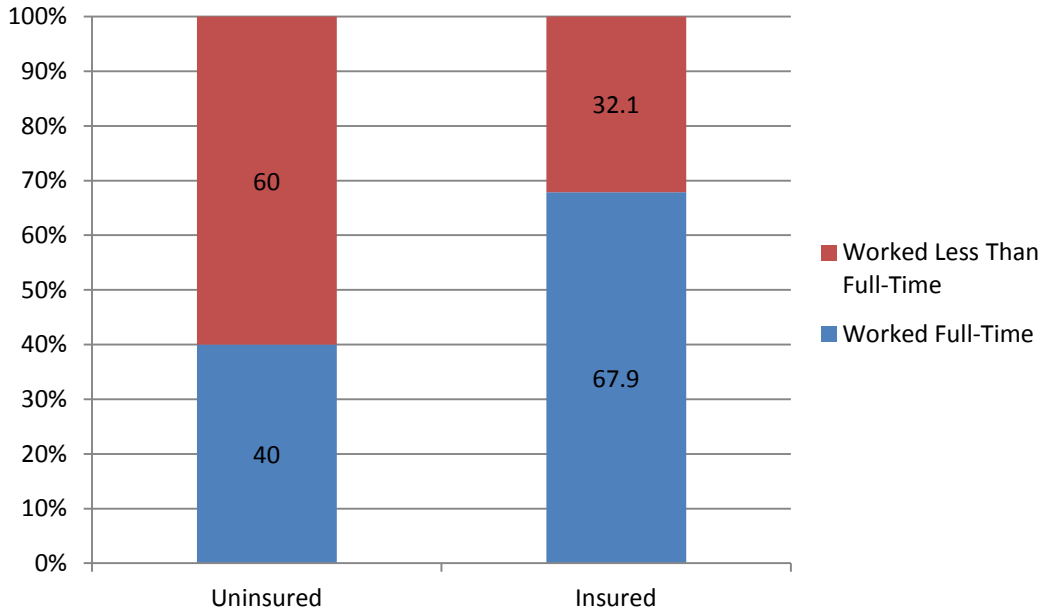
Figure 1. Age distribution of the uninsured and insured in Kentucky, age 18-64, stratified by gender
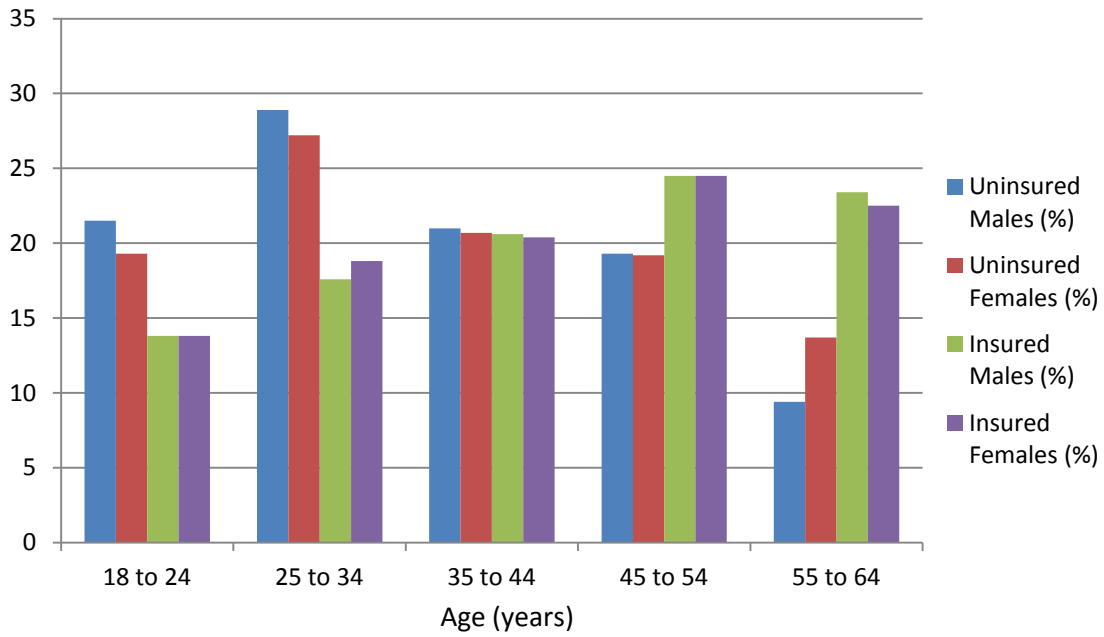
Figure 2. Employment rate of insured and uninsured in Kentucky, age 18-64

Figure 3. Work level of insured and uninsured working year round in Kentucky, age 18-64

Figure 4. Percentage without health insurance in Kentucky by race, age 18-64
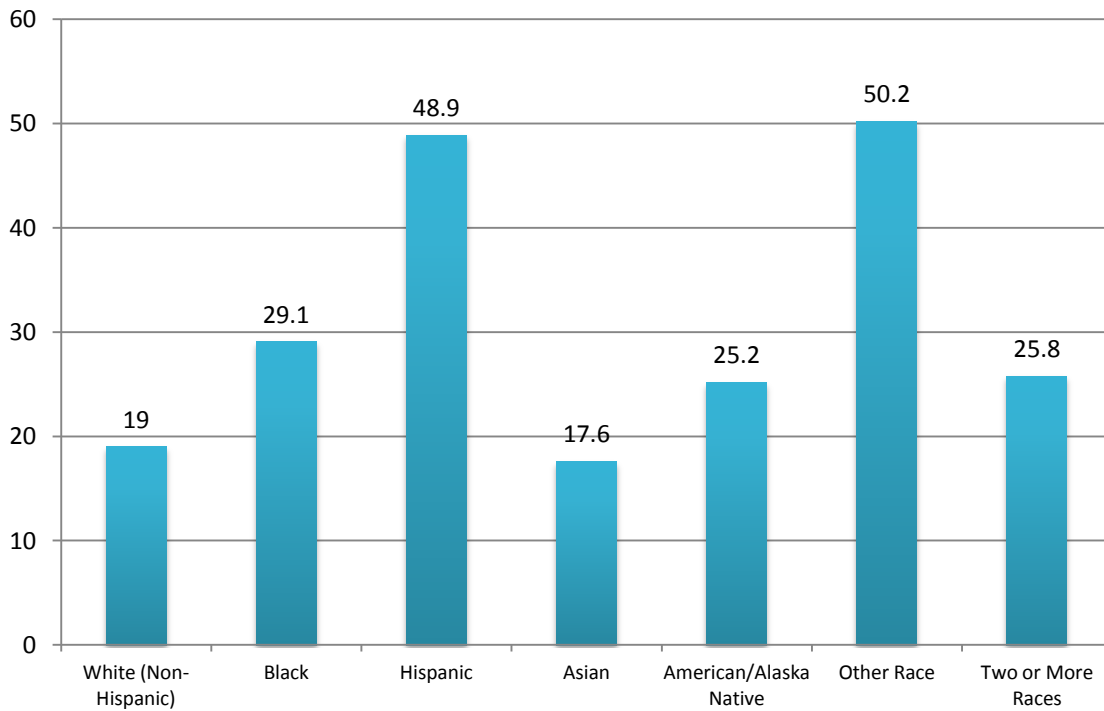
Figure 5. Ratio of income to poverty level of the uninsured and insured in Kentucky, age 18-64

Legend: Uninsured (%), Insured (%)

Data:
- Under 1.38 of poverty threshold: Uninsured 50.4, Insured 18.6
- 1.38 to 3.99 of poverty threshold: Uninsured 41.2, Insured 43.2
- 4.00 or more of poverty threshold: Uninsured 8.4, Insured 38.2
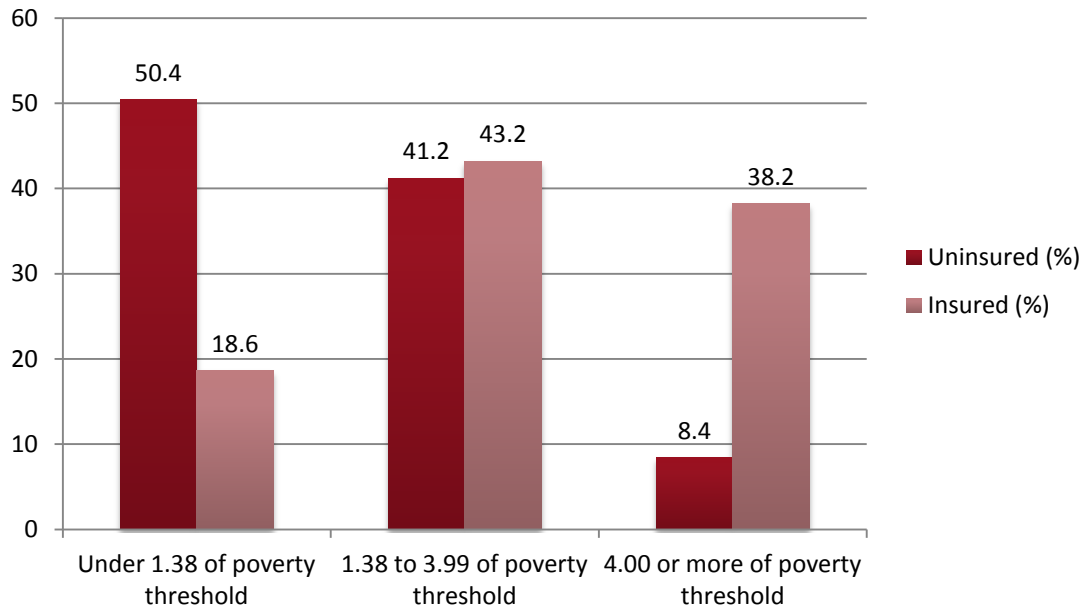
Figure 6. Self reported health status by health insurance coverage in Kentucky, age 18-64

Legend: Uninsured (%), Insured (%)

Data:
- Frequent Poor Mental Health*: Uninsured 23.4, Insured 13.4
- Frequent Poor Physical Health: Uninsured 16.2, Insured 13.3
- General Health Poor/Fair*: Uninsured 24.5, Insured 17.3
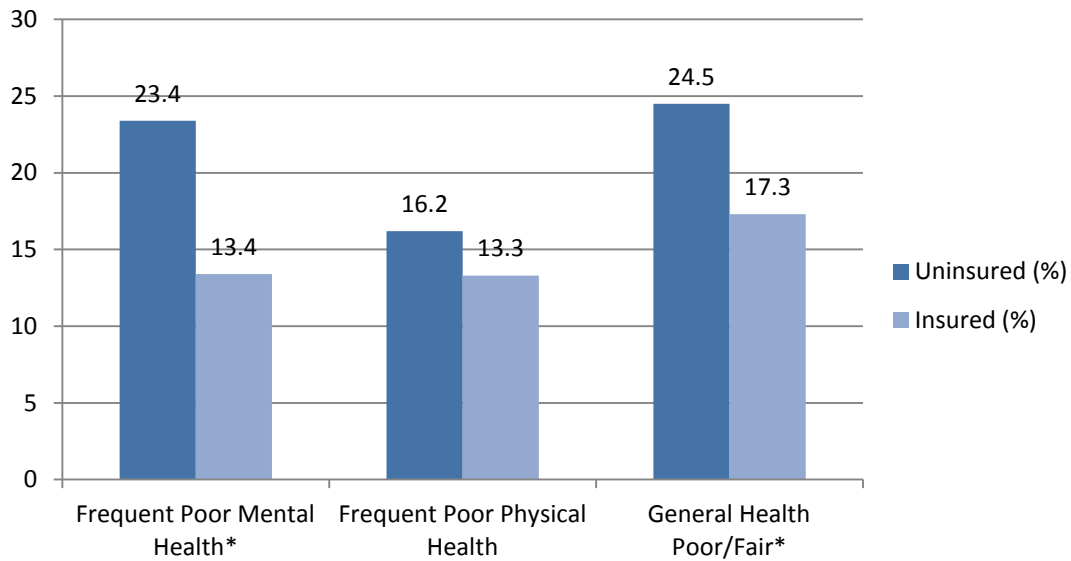
Note: Frequent Poor Mental Health and Frequent Poor Physical Health defined as >14 days of poor mental or physical health, respectively, in previous 30 days
*Statistically significant difference between uninsured and insured

Figure 7. Length of time since last health checkup among Kentuckians, age 18-64
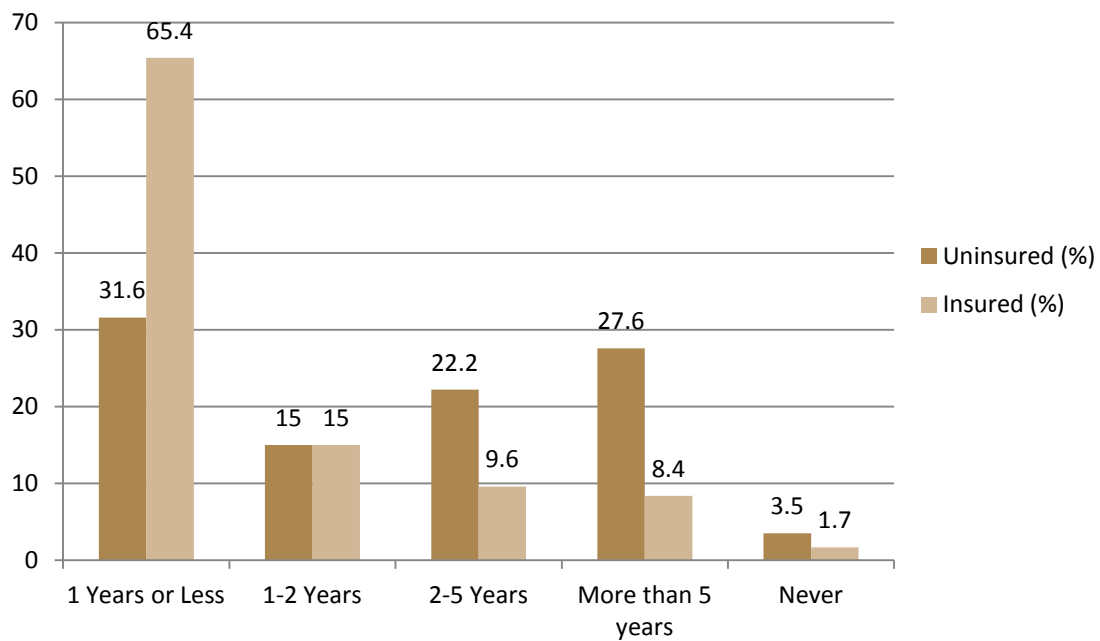
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APPENDIX A: Extended descriptive statistics of uninsured and insured Kentuckians, age 18-64

	Uninsured			Insured		
	WN	ME	%	WN	ME	%
Age Distribution (Male 18-64)						
18 to 24	61,883	3,031	21.5	142,015	3,697	13.8
25 to 34	83,328	4,230	28.9	180,277	4,353	17.6
35 to 44	60,526	3,907	21	211,876	3,968	20.6
45 to 54	55,521	3,945	19.3	251,666	4,594	24.5
55 to 64	27,025	2,613	9.4	240,273	3,000	23.4
Age Distribution (Female 18-64)						
18 to 24	51,274	3,518	19.3	153,656	3,443	13.8
25 to 34	72,188	3,797	27.2	208,186	4,035	18.8
35 to 44	54,874	3,576	20.7	226,872	4,120	20.4
45 to 54	51,013	3,447	19.2	271,937	3,588	24.5
55 to 64	36,340	2,893	13.7	249,300	3,462	22.5
Education (25 - 64 years old)						
Less than High School	103,270	5,138	23.4	192,568	8,118	10.5
High School Graduate	181,580	7,410	41.2	586,080	11,342	31.8
Some College/Associate's Degree	121,473	6,255	27.6	569,242	11,971	31
Bachelor's Degree or Higher	34,492	3,460	7.8	492,497	11,921	26.8
Employment Status						
Unemployed	103,019	5,690	18.6 (26.2)*	97,783	5,139	4.6 (6.3)*
Employed	289,969	9,732	52.3 (73.8)*	1,450,600	13,388	67.9 (93.7)*
Not in Labor Force	160,984	7,462	29.1	587,675	10,519	27.5
Gender						
Male	288,283	8,115	52	1,026,107	8,739	48
Female	265,689	8,173	48	1,109,951	8,507	52
Race						
White	465,826	12,353	84.1	1,921,236	12,886	90
Black	61,806	4,689	11.2	150,286	4,992	7
Asian	5,562	1,284	1	26,003	2,059	1.2
American Indian/Alaska Native	1,564	747	0.3	4,639	1,033	0.2
Other Race	11,340	2,434	2	11,268	2,393	0.5
Two or More Races	7,707	1,521	1.4	22,171	2,832	1
*Hispanic**	*34,471*	*3,263*	6.2	*35,980*	*3,542*	1.7
*White (Non-Hispanic)***	*445,711*	*11,758*	80.5	*1,900,229*	*12,231*	89
Ratio of Income to Poverty Level (Past 12 months)						
Under 1.38 of poverty threshold	278,020	8,705	50.4	390,918	12,700	18.6
1.38 to 1.99 of poverty threshold	89,927	5,585	16.3	206,899	9,348	9.8
2.00 to 3.99 of poverty threshold	137,766	7,408	25	700,619	15,948	33.3
4.00 or more of poverty threshold	46,166	4,300	8.4	804,169	14,962	38.2
Work Experience						
Worked Full-Time, Year Round	149,243	6,683	26.9	1,073,188	12,478	50.2
Worked Less than Full-Time, Year Round	224,674	8,787	40.6	507,306	10,237	23.7
Did Not Work	180,055	7,732	32.5	555,564	10,254	26

Note: Percentage values are for columns; i.e. percentage of total uninsured or insured respectively

WN = Weighted Sample Size (Population Estimate); ME = Marginal Error of WN (90% confidence level)

* Values in parenthesis are percentages when those not in labor force are excluded, this effectively gives an estimate of employment/unemployment rates

**All those identifying as hispanic, regardless of race; this total is made up of portions of other racial categories

***This is a subportion of the "White" category that excludes those identifying as white and hispanic

APPENDIX B1: Extended data of selected health status variables of uninsured Kentuckians

			Uninsured				chi-square	p-value	Missing Data (%)
	N	%	SE [%]	CI [%]	WN	SE [WN]	CI [WN]			
HEALTH STATUS VARIABLES										
BMI								0	0.991	268 (5.0)
<25 (Normal Weight)	281	31.9	2.6	26.7 - 37.0	162,679	16,140	131,046 - 194,312			
BMI >= 25 (Overweight or Obese)	634	68.1	2.6	63.0 - 73.3	347,629	23,146	302,263 - 392,995			
Cardiovascular Disease (Angina/Coronery HD)								0.85	0.357	64 (1.2)
No	919	96.7	0.7	95.4 - 98.1	520,825	28,561	464,875 - 576,804			
Yes	41	3.3	0.7	1.9 - 4.6	17,515	3,732	10,201 - 24,829			
Diabetes (Ever told excluding pregnancy)								7.25	0.007	-
No	878	94.5	0.9	92.8 - 96.3	514,552	28,483	458,727 - 570,378			
Yes	98	5.5	0.9	3.7 - 7.2	29,908	4,852	20,399 - 39,418			
Frequency of Poor Mental Health (In past month)								19.09	<0.0001	57 (1.1)
Not Frequent (Less than 14 days)	715	76.6	2.2	72.3 - 80.8	414,225	26,214	362,847 - 465,604			
Frequent (14 or more days)	249	23.4	2.2	19.2 - 27.7	126,812	12,708	101,906 - 151,719			
Frequency of Poor Physical Health (In past month)								2.01	0.156	44 (0.8)
Not Frequent (Less than 14 days)	751	83.8	1.9	80.2 - 87.5	452,557	26,982	399,673 - 505,441			
Frequent (14 or more days)	213	16.2	1.9	12.5 - 19.8	87,257	10,694	66,297 - 108,216			
General Health								9.47	0.002	-
Poor/Fair	327	24.5	2.2	20.2 - 28.7	133,166	12,921	107,841 - 158,492			
Good or better	649	75.5	2.2	71.9 - 79.8	411,450	26,155	360,187 - 462,713			
HEALTH CARE ACCESS VARIABLES										
Colorectal Cancer Screening (50-64 Colonoscopy)								56.93	<.0001	-
No	256	70.2	3.2	64.0 - 76.4	69,839	6,385	57,325 - 82,353			
Yes	125	29.8	3.2	23.6 - 36.0	29,619	3,506	22,748 - 36,490			
Couldn't see a doctor because of cost								171.52	<0.0001	-
No (False)	425	44.8	2.7	39.5 - 50.2	244,023	19,400	206,000 - 282,046			
Yes (True)	550	55.2	2.7	49.8 - 60.5	300,197	21,934	257,208 - 343,187			
Length of time since last checkup								30.34	<0.0001	78 (1.5)
1 Years or Less	382	31.6	2.3	27.1 - 36.2	168,453	13,558	141,880 - 195,026			
1-2 Years	138	15	2	11.0 - 19.0	79,759	11,895	56,446 - 103,071			
2-5 Years	172	22.2	2.5	17.3 - 27.2	118,430	15,788	87,487 - 149,373			
More than 5 years	231	27.6	2.5	22.7 - 32.5	147,032	15,748	116,166 - 177,898			
Never	35	3.5	0.8	2.0 - 5.0	18,710	4,033	10,804 - 26,615			
Prostate Cancer Screening (Men 40+ PSA past 2 years)								41.82	<0.0001	69 (5.3)
No	165	85.9	3	80.2 - 91.7	90,873	10,754	69,796 - 111,951			
Yes	42	14.1	3	8.3 - 19.8	14,871	3,165	8,668 - 21,074			
Women's Health: 18+ pap test in past 3 years								15.89	0.0001	14 (0.6)
No	150	28	3.4	21.3 - 34.7	58,835	8,263	42,640 - 75,030			
Yes	290	72	3.4	65.3 - 78.7	151,211	13,947	123,875 - 178,547			
Women's Health: 40+ mammogram in past 2 years								35.91	<0.0001	68 (2.5)
No	230	57.3	4.2	49.0 - 65.5	67,288	7,811	51,979 - 82,597			
Yes	179	42.7	4.2	34.5 - 51.0	50,213	6,299	37,867 - 62,559			
HEALTH BEHAVIOR VARIABLES										
Alcohol Heavy Consumption								1.57	0.211	129 (2.4)
No	897	94.4	1.2	92.1 - 96.7	496,845	27,813	442,332 - 551,357			
Yes	44	5.6	1.2	3.3 - 7.9	29,622	6,311	17,253 - 41,990			
Exercise (Last 30 Days)								6.03	0.014	-
No	385	32	2.3	27.4 - 36.6	174,236	13,915	146,964 - 201,509			
Yes	590	68	2.3	63.4 - 72.6	370,091	25,674	319,771 - 420,411			
Smoking Status								68.23	<0.0001	11 (0.2)
Former/Never	550	50.8	2.7	45.4 - 56.2	276,096	20,128	236,645 - 315,547			
Current	425	49.2	2.7	43.8 - 54.6	267,229	21,294	225,494 - 308,965			

Note: Percentage values are for columns; i.e. percentage of total uninsured or insured respectively

N = sample size; WN = weighted sample size (population estimate); SE[i] = standard error of i; CI[i] = 95% confidence interval for i;

Missing data points reported if total number in sample that did not answer or replied unsure/don't know is greater than 10, percentages are percent of total data

Chi-square, p-value, and missing data are values for the comparison of the uninsured in this appendix (APPENDIX B1) to the insured in APPENDIX B2

APPENDIX B2: Extended data of selected health status variables of insured Kentuckians

	N	%	SE [%]	CI [%]	WN	SE [WN]	CI [WN]	chi-square	p-value	Missing Data (%)
				Insured						
HEALTH STATUS VARIABLES										
BMI								0	0.991	268 (5.0)
<25 (Normal Weight)	1,227	31.8	1.3	29.4 - 34.3	650,737	30,736	590,495 - 710,978			
BMI >= 25 (Overweight or Obese)	2,914	68.2	1.3	65.7 - 70.6	1,392,649	38,190	1,317,798 - 1,467,501			
Cardiovascular Disease (Angina/Coronery HD)								0.85	0.357	64 (1.2)
No	4,028	96	0.4	95.2 - 96.8	2,038,197	45,400	1,949,215 - 2,127,179			
Yes	272	4	0.4	3.2 - 4.8	84,774	8,288	68,529 - 101,018			
Diabetes (Ever told excluding pregnancy)								7.25	0.007	-
No	3,762	91.6	0.5	90.6 - 92.7	1,955,697	45,476	1,866,566 - 2,044,828			
Yes	581	8.4	0.5	7.3 - 9.4	178,442	11,147	156,594 - 200,290			
Frequency of Poor Mental Health (In past month)								19.09	<0.0001	57 (1.1)
Not Frequent (Less than 14 days)	3,572	86.6	0.8	85.0 - 88.1	1,833,609	44,488	1,746,414 - 1,920,804			
Frequent (14 or more days)	731	13.4	0.8	11.9 - 15.0	284,811	17,349	250,807 - 318,814			
Frequency of Poor Physical Health (In past month)								2.01	0.156	44 (0.8)
Not Frequent (Less than 14 days)	3,500	86.7	0.7	85.2 - 88.1	1,843,984	45,277	1,755,243 - 1,932,726			
Frequent (14 or more days)	816	13.3	0.7	11.9 - 14.8	283,698	15,333	253,646 - 313,750			
General Health								9.47	0.002	-
Poor/Fair	1,095	17.3	0.8	15.7 - 19.0	370,003	17,397	335,906 - 404,099			
Good or better	3,248	82.7	0.8	81.0 - 84.3	1,763,175	45,003	1,674,971 - 1,851,380			
HEALTH CARE ACCESS VARIABLES										
Colorectal Cancer Screening (50-64 Colonoscopy)								56.93	<.0001	-
No	848	37.6	1.5	34.6 - 40.6	269,530	13,653	242,770 - 296,291			
Yes	1,478	62.4	1.5	59,4 - 65.4	447,428	15,844	416,373 - 478,482			
Couldn't see a doctor because of cost								171.52	<0.0001	-
No (False)	3,828	89.5	0.7	88.0 - 90.9	1,908,006	44,402	1,820,979 - 1,995,033			
Yes (True)	511	10.5	0.7	9.1 - 12.0	224,502	16,448	192,265 - 256,740			
Length of time since last checkup								30.34	<0.0001	78 (1.5)
1 Years or Less	3,045	65.4	1.3	62.8 - 67.9	1,363,798	37,112	1,291,059 - 1,436,536			
1-2 Years	512	15	1	13.1 - 17.0	313,663	22,642	269,286 - 358,040			
2-5 Years	324	9.6	0.9	7.8 - 11.4	199,927	19,919	160,887 - 238,967			
More than 5 years	339	8.4	0.7	7.1 - 9.6	174,594	13,856	147,437 - 201,751			
Never	68	1.7	0.3	1.0 - 2.3	34,770	6,699	21,640 - 47,901			
Prostate Cancer Screening (Men 40+ PSA past 2 years)								41.82	<0.0001	69 (5.3)
No	505	52.9	2.2	48.6 - 57.3	301,613	19,609	263,180 - 340,046			
Yes	533	47.1	2.2	42.7 - 51.4	268,061	15,414	237,851 - 298,271			
Women's Health: 18+ pap test in past 3 years								15.89	0.0001	14 (0.6)
No	301	13.3	1.2	11.0 - 15.7	111,411	10,533	90,767 - 132,054			
Yes	1,620	86.7	1.2	84.3 - 89.0	724,537	26,464	672,699 - 776,405			
Women's Health: 40+ mammogram in past 2 years								35.91	<0.0001	68 (2.5)
No	528	26.4	1.6	23.3 - 29.6	169,097	12,259	145,071 - 193,124			
Yes	1,699	73.6	1.6	70.4 - 76.7	470,813	15,573	440,291 - 501,335			
HEALTH BEHAVIOR VARIABLES										
Alcohol Heavy Consumption								1.57	0.211	129 (2.4)
No	4,113	96	0.5	95.0 - 97.0	2,002,012	44,987	1,913,838 - 2,090,186			
Yes	141	4	0.5	3.0 - 5.0	84,061	10,541	63,401 - 104,721			
Exercise (Last 30 Days)								6.03	0.014	-
No	1,365	25.8	1	23.8 - 27.9	550,924	23,315	505,228 - 596,620			
Yes	2,981	74.2	1	72.1 - 76.2	1,583,133	43,599	1,497,681 - 1,668,584			
Smoking Status								68.23	<0.0001	11 (0.2)
Former/Never	3,248	77.3	1.1	75.3 - 79.4	1,648,306	42,713	1,564,590 - 1,732,023			
Current	1,090	22.7	1.1	20.6 - 24.7	483,339	24,089	436,126 - 530,552			

Note: Percentage values are for columns; i.e. percentage of total uninsured or insured respectively

N = sample size; WN = weighted sample size (population estimate); SE[i] = standard error of i; CI[i] = 95% confidence interval for i;

Missing data points reported if total number in sample that did not answer or replied unsure/don't know is greater than 10, percentages are percent of total data

Chi-square, p-value, and missing data are values for the comparison of the uninsured in this appendix (APPENDIX B2) to the uninsured in APPENDIX B1