2012 Kansas Behavioral Risk Factor Surveillance System
Tobacco and Kansas Adults

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Tobacco and Kansas Adults: 2012 BRFSS

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Executive Summary

Each year since 1992, the Kansas Department of Health and Environment, Bureau of Health Promotion, Tobacco Use Prevention Program (TUPP) has proposed questions to be included in the annual Kansas Behavioral Risk Factor Surveillance System (BRFSS) in addition to core questions on tobacco from Centers for Disease Control and Prevention (CDC). This report summarizes the results of the state-added and core tobacco indicators in the 2012 BRFSS.

Nationally and in Kansas, tobacco use is the leading underlying cause of death and is associated with heart disease, stroke, cancer and chronic lung diseases and conditions. The Kansas Department of Health and Environment is currently working with many local entities to provide a tobacco use prevention program across the state. Surveillance and evaluation are major components of this comprehensive approach. Currently, surveillance of tobacco-related trends is used to provide guidance for tobacco prevention activities statewide and permits cultural tailoring to Kansas' increasingly diverse population. Additionally, surveillance aids in monitoring the effectiveness of health promotion measures once implemented.

The state added questions directly impact the four goal areas of Comprehensive Tobacco Control as described in the Centers for Disease Control and Prevention (CDC) *Best Practices for Comprehensive Tobacco Control Programs.*

1. Elimination of exposure to environmental tobacco smoke

2. Promotion of tobacco cessation among youth and adults

3. Prevention of initiation of tobacco use among youth

4. Identification and elimination of disparities among different populations

Results from the 2012 Kansas BRFSS support several key tobacco control strategies and initiatives. First, with smoking prevalence dropping a couple percentage points from 2011, there is evidence that the modest, but consistent, downward trend in smoking prevalence observed between 2000 and 2010 continues in Kansas. This is important because it is the first indicator of the direction of the smoking prevalence in Kansas since the 2011 change in BRFSS methodology and it corroborates the trend prior to the methodology change. Second, we find that 3 out of 4 Kansas adults explicitly support the Kansas Clean Indoor Air Act, which includes half of the smokers in the state. Finally, smoking cessation continues to be a critical part of reducing the burden of tobacco in Kansas with more than half of current smokers making at least one quit attempt in the past year.

This report also quantified the use of emerging tobacco products. While dissolvable tobacco continues to be unpopular, the popularity of e-cigarettes has skyrocketed in Kansas with nearly 1 in 10 Kansas adults and 1 in 3 Kansas adult smokers having already tried e-cigarettes. Additional surveillance of e-cigarettes is warranted as the issue develops nationally and in Kansas.

There remains much to be done to reduce the tremendous burden of tobacco-related disease. One in 5 Kansas adults currently smoke cigarettes and it is likely that this estimate does not include many young adults who smoke "casually" and do not identify as smokers. The tobacco industry continues to develop and market new tobacco products and other nicotine delivery devices for use in smoke-free environments to maintain nicotine addiction and delay cessation. Many tobacco products also continue to be marketed in sweet and fruity flavors that appeal to youth. The 2014 Surgeon General's Report, *The Health Consequences of Smoking – 50 years of Progress,* found that changes in the composition of cigarettes since the 1950s have increased the risk of the most common type of lung cancer. This means that, although smokers smoke fewer cigarettes than those 50 years ago, they are at higher risk of developing lung cancer. The report also expands the list of diseases caused by cigarette smoking to include age-related macular degeneration, congenital birth defects, liver cancer, colorectal cancer, diabetes, ectopic pregnancy, erectile dysfunction and rheumatoid arthritis. The tobacco epidemic, states the Surgeon General, "was initiated and has been sustained by the aggressive strategies of the tobacco industry, which has deliberately misled the public on the risks of smoking cigarettes."[i]

Kansas continues to lose 3,800[ii] adults a year to smoking-attributable disease and spends an estimated $927 million annually on health care costs directly caused by smoking.[iii] To learn more, visit TUPP or the Tobacco Free Kansas Coalition at online at: Kansas Tobacco Use Prevention Program or Tobacco Free Kansas Coalition.

Conventions

Several conventions are used throughout this document to aid the reader in understanding complex data. In the following tables, the relative size of the point prevalence of an indicator is represented by bar graphs within each table. It is important to note that the bars in each table do not denote statistically significant differences. To determine whether two weighted percents are significantly different from one another, the reader must compare the upper and lower confidence limits. For instance, on table 1 we see that 21.1 percent of male adults and 17.7 percent of female adults smoked cigarettes in 2012. Are these two estimates significantly different? Because the upper confidence limit of the female estimate, 19.0 percent, is less than the lower confidence limit of the male estimate, 19.5 percent, the confidence limits do not overlap and estimates of cigarette smoking among male and female Kansas adults are significantly different from each other. Similarly, the difference between the percent of adults age 35-44 who smoke (19.0%, 95% CI: 16.5%-21.5%) is not significantly different from the percent of adults age 45-54 who smoke (22.0%, 95% CI: 19.7%-24.2%) because the confidence limits of the two estimates overlap (table 1).

Each table also includes a Rao-Scott Chi-Square test p-value when possible. This is a test for independence between two cross-tabulated variables. If the p-value is less than 0.05, we reject the null hypothesis that the two variables are independent of each other, concluding that the indicator presented varies significantly by levels of the corresponding demographic variable. This is useful in determining whether a demographic characteristic demonstrates a disparity with respect to the indicator in question.

Estimates presented in this report are reviewed for quality using a variety of criteria. First, the estimate is suppressed (*) if the relative standard error (RSE) is greater than 30 percent or the survey responses used to calculate the weighted percent are low (i.e., numerator < 5 or denominator < 50). The RSE is the ratio of the standard error of the weighted percent to the weighted percent. RSE's above 30 percent indicate the estimate may be unstable. The estimate is provided, but flagged as imprecise (Ɪ) if the margin of error (i.e. half-width of the 95% confidence interval) is greater than 5 percent.

Finally, where sample size permits, crude Race/Ethnicity subpopulation prevalence estimates have been replaced with age-adjusted Race/Ethnicity subpopulation prevalence estimates. Race/Ethnicity estimates were standardized to the 2000 U.S. Census age distribution and are denoted by "age adjusted" in the title. Where age-adjusted estimates are used, crude Race/Ethnicity subpopulation prevalence estimates have been made available in the appendix.

Tobacco Use

Despite a variety of brand name tobacco product line expansions and new products, cigarette smoking and smokeless tobacco use remain the most common types of tobacco use. The 2012 BRFSS included questions regarding cigarette smoking, smokeless tobacco use and trying emerging products such as dissolvable tobacco and electronic cigarettes.

Cigarette Smoking

Adults are classified as current smokers when they have smoked at least 100 cigarettes in their life and currently smoke some days or every day. Former smokers have smoked at least 100 cigarettes in their life and do not currently smoke. Never-smokers have not smoked 100 cigarettes in their life. In Kansas, about 1 in 5 adults (19.4%, 95% CI: 18.4%-20.4%) currently smoke cigarettes. This is a modest, but significant reduction from the 2011 estimate of 22 percent (95% CI: 21.2%-22.8%).

Figure 1. Smoking status among Kansas adults, BRFSS 2012
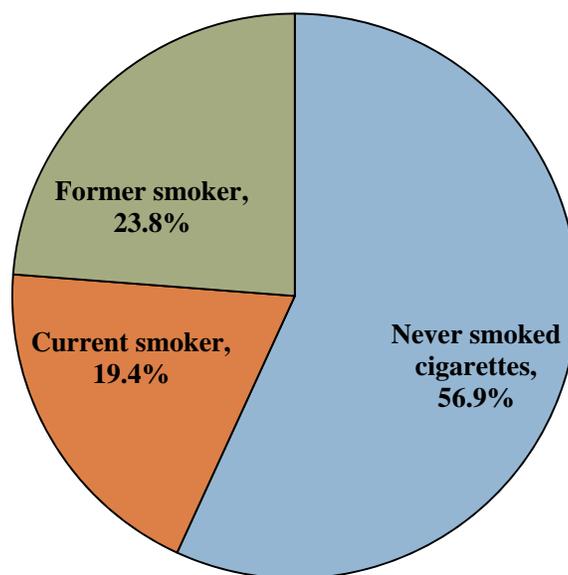
Among Kansas adults, current smoking varies significantly by a variety of demographic characteristics (table 1). In general, groups with a higher prevalence of smoking include the following:

- younger adults,
- adults with a lower annual household income,
- adults living with a disability,
- adults without health insurance,
- adults with less education,
- non-Hispanic adults and
- adults with poor mental or physical health.

Being a veteran was not associated with current smoking in this analysis, although other reports have documented age as a potential moderator of risk behavior prevalence differences between the veteran and non-veteran population.

Table 1. Percent of Kansas adults who are current smokers by selected sociodemographic characteristics, BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Current smoking status by age group (p=<.0001).			
18-24 years old	**22.6%**	18.8% - 26.4%	
25-34 years old	**28.3%**	25.1% - 31.5%	
35-44 years old	**19.0%**	16.5% - 21.5%	
45-54 years old	**22.0%**	19.7% - 24.2%	
55-64 years old	**16.9%**	15.2% - 18.7%	
65+ years old	**8.8%**	7.7% - 9.9%	
Current smoking status by annual household income (p=<.0001).			
Less than $15,000	**31.6%**	27.3% - 36.0%	
$15,000-$24,999	**27.6%**	24.7% - 30.6%	
$25,000-$34,999	**21.0%**	17.8% - 24.2%	
$35,000-$49,999	**19.8%**	17.1% - 22.4%	
$50,000+	**12.7%**	11.4% - 13.9%	
Current smoking status by disability status (p=<.0001).			
Living with a disability	**25.8%**	23.6% - 28.0%	
Not living with a disability	**17.6%**	16.4% - 18.7%	
Current smoking status by gender (p=0.0012).			
Female	**17.7%**	16.5% - 19.0%	
Male	**21.1%**	19.5% - 22.7%	
Current smoking status by health care coverage status (p=<.0001).			
Has health insurance	**16.5%**	15.5% - 17.6%	
No health insurance	**33.3%**	29.9% - 36.7%	
Current smoking status by level of education (p=<.0001).			
Some high school	**31.4%**	26.9% - 35.9%	
High school diploma or GED	**24.5%**	22.5% - 26.5%	
Some college or technical school	**19.6%**	17.8% - 21.4%	
College graduate	**8.9%**	7.8% - 10.0%	
Current smoking status by mental health status (p=<.0001).			
14+ days of poor mental health in the past month	**37.8%**	33.9% - 41.7%	
<14 days of poor mental health in the past month	**17.3%**	16.2% - 18.3%	
Current smoking status by physical health status (p=<.0001).			
14+ days of poor physical health in the past month	**28.9%**	25.5% - 32.4%	
<14 days of poor physical health in the past month	**18.4%**	17.3% - 19.4%	
Current smoking status by race/ethnicity group, age-adjusted.			
African American Non-Hispanic	**21.4%**	16.2% - 26.7%	ɫ
Hispanic	**9.4%**	6.6% - 12.2%	
Multiracial Non-Hispanic	**28.5%**	19.6% - 37.5%	ɫ
Other Race Non-Hispanic	**24.3%**	17.7% - 31.0%	ɫ
White Non-Hispanic	**20.5%**	19.3% - 21.7%	
Current smoking status by veteran status (p=0.8242).			
Veteran	**19.7%**	17.0% - 22.4%	
Non Veteran	**19.4%**	18.3% - 20.4%	

* RSE > 30%, numerator < 5 or denominator < 50.
ɫ margin of error > 5%.

Overall, 23.8 percent (95% CI: 22.8% - 24.7%) of Kansas adults are former smokers. Former smoking in Kansas (table 2) is strongly associated with age. As people age, adults who smoke accumulate quit attempts and many eventually quit. In Kansas, about 40 percent of adults age 65 or older are former smokers. Men have a higher prevalence of former smoking than women and the veteran population has a former smoking prevalence more than double that of the non-veteran population.

Table 2. Percent of Kansas adults who are former smokers by selected sociodemographic characteristics, BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Former smoking status by age group (p=<.0001).			
18-24 years old	**6.6%**	4.4% - 8.8%	
25-34 years old	**16.7%**	14.2% - 19.3%	
35-44 years old	**20.9%**	18.2% - 23.5%	
45-54 years old	**22.8%**	20.5% - 25.1%	
55-64 years old	**30.2%**	28.0% - 32.3%	
65+ years old	**40.7%**	38.9% - 42.5%	
Former smoking status by annual household income (p=<.0001).			
Less than $15,000	**17.8%**	14.7% - 21.0%	
$15,000-$24,999	**21.7%**	19.2% - 24.2%	
$25,000-$34,999	**30.0%**	26.5% - 33.4%	
$35,000-$49,999	**27.7%**	25.1% - 30.4%	
$50,000+	**24.7%**	23.2% - 26.2%	
Former smoking status by disability status (p=<.0001).			
Living with a disability	**30.0%**	27.9% - 32.0%	
Not living with a disability	**21.9%**	20.8% - 23.0%	
Former smoking status by gender (p=<.0001).			
Female	**20.8%**	19.6% - 22.0%	
Male	**26.8%**	25.3% - 28.4%	
Former smoking status by health care coverage status (p=<.0001).			
Has health insurance	**25.3%**	24.2% - 26.3%	
No health insurance	**16.7%**	14.1% - 19.3%	
Former smoking status by level of education (p=0.0003).			
Some high school	**21.9%**	18.0% - 25.8%	
High school diploma or GED	**26.5%**	24.6% - 28.4%	
Some college or technical school	**24.6%**	22.9% - 26.4%	
College graduate	**20.6%**	19.2% - 22.0%	
Former smoking status by mental health status (p=0.7103).			
14+ days of poor mental health in the past month	**23.2%**	20.1% - 26.4%	
<14 days of poor mental health in the past month	**23.8%**	22.8% - 24.9%	
Former smoking status by physical health status (p=<.0001).			
14+ days of poor physical health in the past month	**29.5%**	26.4% - 32.6%	
<14 days of poor physical health in the past month	**23.1%**	22.1% - 24.1%	
Former smoking status by race/ethnicity group, age-adjusted.			
African American Non-Hispanic	**19%**	15.3% - 23.5%	
Hispanic	**21%**	16.0% - 25.5%	
Multiracial Non-Hispanic	**27%**	18.8% - 35.4%	ŧ
Other Race Non-Hispanic	**17%**	12.1% - 22.0%	
White Non-Hispanic	**24%**	23.0% - 25.1%	
Former smoking status by veteran status (p=<.0001).			
Veteran	**44.0%**	40.9% - 47.1%	
Non Veteran	**21.2%**	20.2% - 22.2%	

* RSE > 30%, numerator < 5 or denominator < 50.
ŧ margin of error > 5%.

Overall, 56.9 percent (95% CI: 55.6% - 58.1%) of Kansas adults are classified as "never smokers," although, as discussed previously, this does not mean they have never smoked a cigarette. In this report, never smokers are adults who have smoked less than 100 cigarettes in their life. In Kansas, never smoking status (table 3) is more common among adult women than men and is more common among young adults, ages 18-24 years, than older adults. Because this measure consists of having smoked less than 100 cigarettes in one's life it does not provide an accurate picture of cigarette smoking initiation, more than 95 percent of which occurs before age 25, and may not reflect "casual" smoking in college-age students. Annual income and education have the opposite relationship with never-smoking prevalence than they do with current smoking. Never-smoking prevalence is higher in adults with more education and higher annual income. Never-smoking prevalence also has the following characteristics:

- higher in adults with health insurance coverage,

- higher among those not living with a disability,

- higher among non-veterans and

- higher among adults reporting better mental and physical health.

Table 3. Percent of Kansas adults who are never smokers by selected sociodemographic characteristics, BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Never smoking status by age group (p=<.0001).			
18-24 years old	**70.8%**	66.6% - 74.9%	
25-34 years old	**55.0%**	51.5% - 58.4%	
35-44 years old	**60.2%**	57.0% - 63.3%	
45-54 years old	**55.2%**	52.5% - 57.9%	
55-64 years old	**52.9%**	50.6% - 55.3%	
65+ years old	**50.4%**	48.6% - 52.3%	
Never smoking status by annual household income (p=<.0001).			
Less than $15,000	**50.5%**	45.8% - 55.3%	
$15,000-$24,999	**50.7%**	47.4% - 54.0%	
$25,000-$34,999	**49.1%**	45.4% - 52.8%	
$35,000-$49,999	**52.5%**	49.4% - 55.6%	
$50,000+	**62.6%**	60.9% - 64.4%	
Never smoking status by disability status (p=<.0001).			
Living with a disability	**44.3%**	41.9% - 46.6%	
Not living with a disability	**60.5%**	59.1% - 61.9%	
Never smoking status by gender (p=<.0001).			
Female	**61.5%**	59.9% - 63.0%	
Male	**52.1%**	50.2% - 53.9%	
Never smoking status by health care coverage status (p=<.0001).			
Has health insurance	**58.2%**	56.9% - 59.4%	
No health insurance	**50.0%**	46.3% - 53.6%	
Never smoking status by level of education (p=<.0001).			
Some high school	**46.6%**	41.6% - 51.7%	ŧ
High school diploma or GED	**49.0%**	46.7% - 51.3%	
Some college or technical school	**55.8%**	53.6% - 57.9%	
College graduate	**70.5%**	68.8% - 72.1%	
Never smoking status by mental health status (p=<.0001).			
14+ days of poor mental health in the past month	**39.0%**	35.0% - 42.9%	
<14 days of poor mental health in the past month	**58.9%**	57.6% - 60.2%	
Never smoking status by physical health status (p=<.0001).			
14+ days of poor physical health in the past month	**41.6%**	37.9% - 45.3%	
<14 days of poor physical health in the past month	**58.5%**	57.3% - 59.8%	
Never smoking status by race/ethnicity group, age-adjusted.			
African American Non-Hispanic	**59.2%**	53.3% - 65.1%	ŧ
Hispanic	**69.8%**	64.7% - 75.0%	ŧ
Multiracial Non-Hispanic	**44.4%**	34.6% - 54.3%	ŧ
Other Race Non-Hispanic	**58.6%**	51.6% - 65.6%	ŧ
White Non-Hispanic	**55.4%**	54.1% - 56.8%	
Never smoking status by veteran status (p=<.0001).			
Veteran	**36.3%**	33.2% - 39.4%	
Non Veteran	**59.5%**	58.2% - 60.8%	

* RSE > 30%, numerator < 5 or denominator < 50.

ŧ margin of error > 5%.

Smokeless Tobacco Use

Overall, 5.5 percent (95% CI: 4.9%-6.1%) of Kansas adults currently use smokeless tobacco. Adults are classified as current smokeless tobacco users when they use chewing tobacco, snuff or snus every day or some days. Snus (rhymes with "goose") is a Swedish word for snuff and refers to a moist smokeless tobacco that is usually sold in small pouches that are placed under the lip against the gum. Smokeless tobacco use is almost exclusively used by males: 0.5 percent (95% CI: 0.3%-0.7%) of adult females in Kansas use smokeless tobacco whereas 10.7 percent (95% CI: 9.5%-12.0%) of adult males use smokeless tobacco. Table 4 provides the prevalence of smokeless tobacco use among male adult Kansas subpopulations.

Like cigarette smoking, male smokeless tobacco use is also less common in Kansas men 55 years and older than in younger men. There is no clear relationship between male smokeless tobacco use and annual income or education and there is no difference in smokeless tobacco use between adult males who have health insurance and those who do not. About 12 percent of male current smokers in Kansas also use smokeless tobacco (table 4).

Table 4. Percent of Kansas adult males who currently use smokeless tobacco by selected sociodemographic characteristics BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Male smokeless tobacco use by age group (p=<.0001).			
18-24 years old	12.9%	8.6% - 17.2%	
25-34 years old	14.9%	11.5% - 18.4%	
35-44 years old	13.0%	9.8% - 16.1%	
45-54 years old	12.7%	9.8% - 15.7%	
55-64 years old	5.9%	4.3% - 7.5%	
65+ years old	4.8%	3.4% - 6.1%	
Male smokeless tobacco use by annual household income (p=0.5201).			
Less than $15,000	13.0%	6.9% - 19.1%	
$15,000-$24,999	9.1%	6.2% - 12.0%	
$25,000-$34,999	10.9%	7.4% - 14.3%	
$35,000-$49,999	12.9%	9.7% - 16.2%	
$50,000+	11.4%	9.5% - 13.2%	
Male smokeless tobacco use by current smoking status (p=0.2299).			
Not a current smoker	10.3%	9.0% - 11.6%	
Current smoker	12.2%	9.2% - 15.2%	
Male smokeless tobacco use by disability status (p=0.2231).			
Not living with a disability	11.2%	9.8% - 12.6%	
Living with a disability	9.3%	6.7% - 11.8%	
Male smokeless tobacco use by health care coverage status (p=0.917).			
No health insurance	10.9%	7.5% - 14.4%	
Has health insurance	10.7%	9.5% - 12.0%	
Male smokeless tobacco use by level of education (p=<.0001).			
Some high school	9.7%	5.6% - 13.8%	
High school diploma or GED	13.2%	10.7% - 15.6%	
Some college or technical school	12.7%	10.4% - 15.0%	
College graduate	6.3%	4.8% - 7.8%	
Male smokeless tobacco use by mental health status (p=0.5869).			
14+ days of poor mental health in the past month	9.6%	5.6% - 13.6%	
<14 days of poor mental health in the past month	10.8%	9.6% - 12.1%	
Male smokeless tobacco use by physical health status (p=0.1397).			
14+ days of poor physical health in the past month	8.0%	4.7% - 11.4%	
<14 days of poor physical health in the past month	11.1%	9.8% - 12.4%	
Male smokeless tobacco use by race/ethnicity group, age-adjusted.			
African American, Non-Hispanic	*	*	
Hispanic	*	*	
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	*	*	
White, Non-Hispanic	12.5%	11.1% - 14.0%	
Male smokeless tobacco use by veteran status (p=0.1981).			
Non Veteran	11.1%	9.7% - 12.5%	
Veteran	9.4%	7.2% - 11.5%	

* RSE > 30%, numerator < 5 or denominator < 50.
₣ margin of error > 5%.

Electronic Cigarettes

Electronic cigarettes, or "e-cigarettes," are battery-powered devices that provide doses of nicotine and other additives to the user in an aerosol. The U.S. Food and Drug Administration has yet to exert regulatory authority over e-cigarettes, so the contents of an e-cigarette vary by brand and manufacturer, and may not be consistent within a brand.

The e-cigarette market in the U.S. is growing rapidly and the product is being used by both adults and youth. During 2011-2012, the prevalence of e-cigarette use doubled among middle and high school students nationally.[iv] The 2012 BRFSS asked adult respondents if they have ever tried e-cigarettes (table 5).

Overall, 8.6 percent (95% CI: 7.5%-9.6%) of Kansas adults have tried e-cigarettes. The prevalence of ever having used an e-cigarette does not vary significantly by gender or veteran status. Some of the more pronounced disparities in ever e-cigarette use among Kansas adults are by age, health insurance coverage and mental health status. In general, younger adults, adults without health insurance and adults reporting poor mental health have a higher prevalence of having tried an e-cigarette than adults with health insurance and those reporting better mental health.

Dissolvable Tobacco

In addition to other dissolvable tobacco products that are widely available, Kansas was designated as a test market for Marlboro and Skoal dissolvable tobacco sticks in 2011. Overall, 1.1 percent (95% CI: 0.7%-1.6%) of Kansas adults have tried dissolvable tobacco. This is a relatively low prevalence that indicates the products are not very popular. Due to the low prevalence of having tried dissolvable tobacco, it is not possible to generate subpopulation prevalence estimates.

Table 5. Percent of Kansas adults who have ever used electronic cigarettes, by selected sociodemographic characteristics, BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Percent of Kansas adults who have ever used e-cigarettes by age group (p=<.0001).			
18-24 years old	**11.4%**	7.4% - 15.4%	
25-34 years old	**15.9%**	12.2% - 19.7%	
35-44 years old	**8.1%**	5.6% - 10.6%	
45-54 years old	**8.6%**	6.4% - 10.9%	
55-64 years old	**5.8%**	4.4% - 7.3%	
65+ years old	**2.8%**	1.8% - 3.8%	
Percent of Kansas adults who have ever used e-cigarettes by annual household income (p=0.0001).			
Less than $15,000	**11.9%**	7.7% - 16.0%	
$15,000-$24,999	**8.8%**	6.2% - 11.5%	
$25,000-$34,999	**13.3%**	9.0% - 17.6%	
$35,000-$49,999	**10.6%**	7.5% - 13.7%	
$50,000+	**5.7%**	4.4% - 7.0%	
Percent of Kansas adults who have ever used e-cigarettes by disability status (p=0.0015).			
Living with a disability	**11.7%**	9.2% - 14.2%	
Not living with a disability	**7.6%**	6.5% - 8.8%	
Percent of Kansas adults who have ever used e-cigarettes by gender (p=0.0574).			
Female	**7.6%**	6.3% - 8.8%	
Male	**9.6%**	7.9% - 11.3%	
Percent of Kansas adults who have ever used e-cigarettes by health care coverage status (p=<.0001).			
Has health insurance	**7.3%**	6.2% - 8.3%	
No health insurance	**14.8%**	11.0% - 18.5%	
Percent of Kansas adults who have ever used e-cigarettes by level of education (p=<.0001).			
Some high school	**11.5%**	7.0% - 16.0%	
High school diploma or GED	**9.7%**	7.6% - 11.8%	
Some college or technical school	**10.3%**	8.3% - 12.3%	
College graduate	**4.2%**	3.1% - 5.3%	
Percent of Kansas adults who have ever used e-cigarettes by mental health status (p=<.0001).			
14+ days of poor mental health in the past month	**20.8%**	16.1% - 25.5%	
<14 days of poor mental health in the past month	**7.0%**	5.9% - 8.0%	
Percent of Kansas adults who have ever used e-cigarettes by physical health status (p=0.0208).			
14+ days of poor physical health in the past month	**12.0%**	8.5% - 15.5%	
<14 days of poor physical health in the past month	**8.2%**	7.0% - 9.3%	
Percent of Kansas adults who have ever used e-cigarettes by race/ethnicity group, age-adjusted.			
African American, Non-Hispanic	*	*	
Hispanic	*	*	
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	*	*	
White, Non-Hispanic	**9.7%**	8.4% - 11.0%	
Percent of Kansas adults who have ever used e-cigarettes by veteran status (p=0.9743).			
Veteran	**8.6%**	5.7% - 11.6%	
Non Veteran	**8.6%**	7.4% - 9.7%	

* RSE > 30%, numerator < 5 or denominator < 50.
ŧ margin of error > 5%.

Dual Tobacco Use

The use of two tobacco products (dual use) can be examined in a variety of ways. In the 2012 BRFSS, the current use of cigarettes and smokeless tobacco use was assessed as well as whether the respondent had tried dissolvable tobacco or e-cigarettes. Overall, 1.3 percent (95% CI: 1.0%-1.7%) of Kansas adults smoke cigarettes and use smokeless tobacco (figure 2).

Figure 2. Percent of Kansas adults that currently smoke, use smokeless tobacco or both, BRFSS 2012
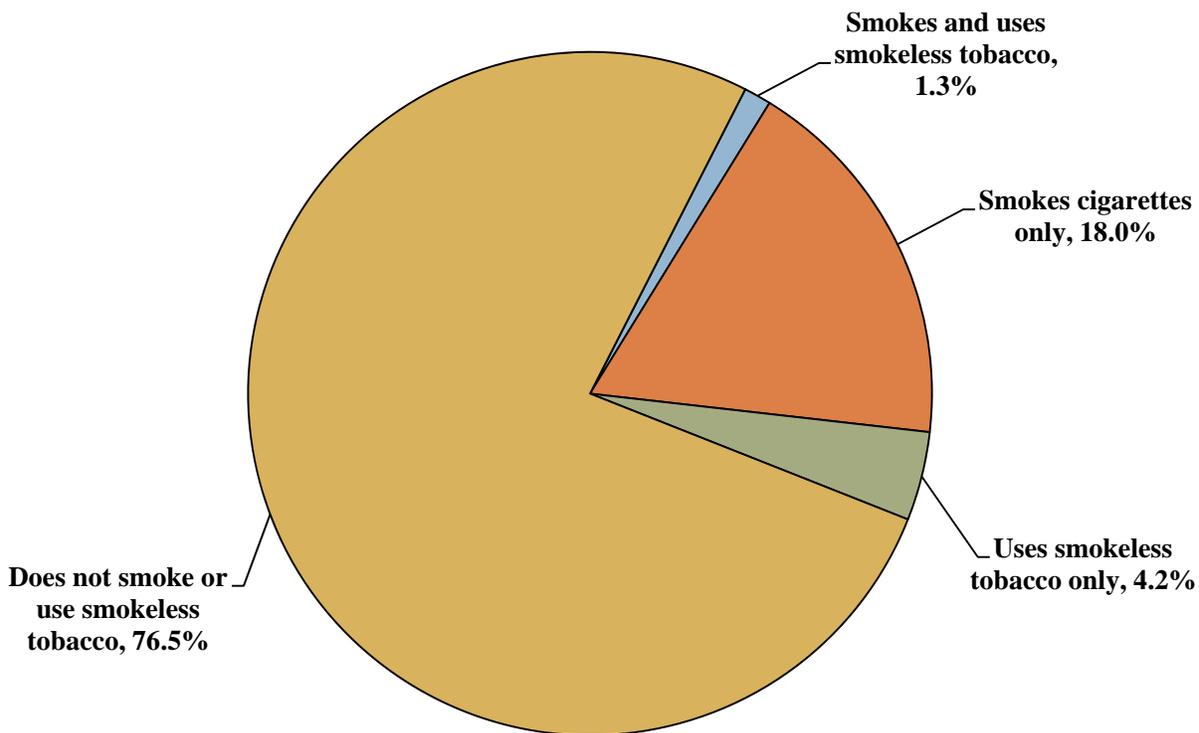
As noted earlier, it is difficult to generate subpopulation prevalence estimates of dissolvable tobacco use due to overall low prevalence of having tried dissolvable tobacco. It is possible, however, to estimate dissolvable tobacco use by current cigarette smoking status. The prevalence of dissolvable tobacco use among non-current smokers is 0.4 percent (95% CI: 0.2%-0.7%) while the prevalence of dissolvable tobacco use among current smokers is 3.8 percent (95% CI: 1.9%-5.7%).

A similar pattern is observed when we examine the prevalence of having tried e-cigarettes by smoking status (figure 3). While only 1 percent (95% CI: 0.5%-1.5%) of never smokers and 5.3 percent (95% CI: 3.6%-7.0%) of former smokers have tried e-cigarettes, 1 in 3 (33.4%, 95% CI: 29.3%-37.4%) current smokers have tried e-cigarettes.

There is currently controversy over whether e-cigarettes can be used to effectively help smokers quit smoking cigarettes or are instead used to supplement cigarette smoking, thus hindering cigarette cessation. The BRFSS is a cross-sectional survey, so although it can describe the prevalence of a product's use at a certain point in time, it cannot contribute anything definitive to the debate about whether e-cigarettes are replacing, supplementing or even expanding cigarette smoking.

Figure 3. Percent of Kansas adults who have ever tried e-cigarettes by cigarette smoking status, BRFSS 2012
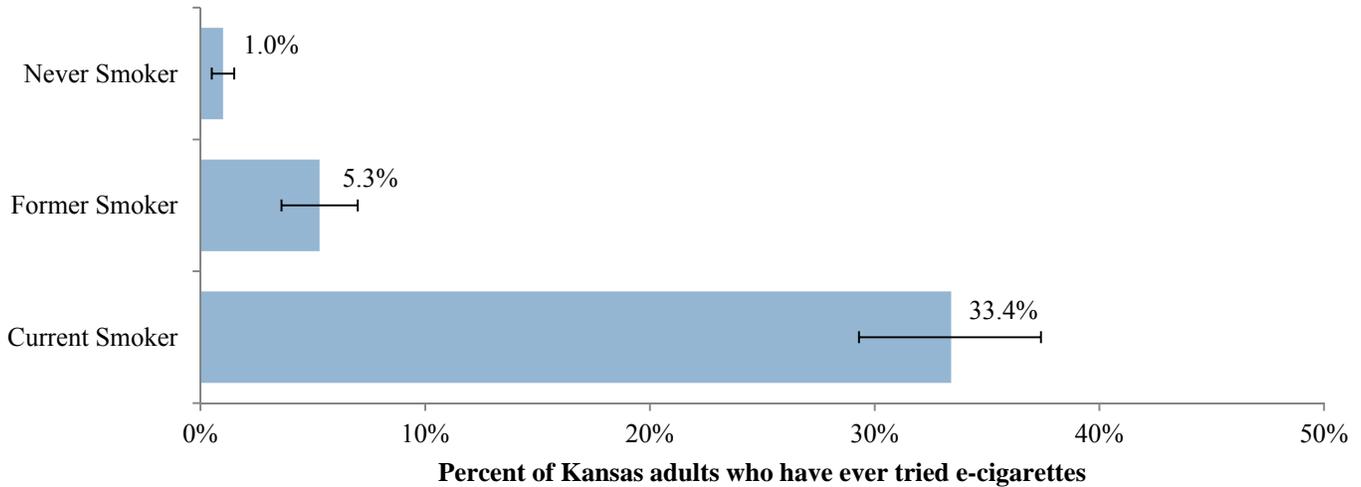
Tobacco Use Cessation

There were two questions on the 2012 BRFSS specifically aimed at assessing tobacco use cessation in Kansas. These questions include past-year quit attempts by current smokers and time since last cigarette among former smokers.

Quit Attempts by Current Smokers

Adult current smokers who quit smoking cigarettes for one day or longer in the past 12 months because they were trying to quit smoking are classified as having made a quit attempt. Overall, 57.0 percent (95% CI: 54.1%-59.9%) of adult Kansas current smokers tried to quit at least once in the past year.

Quit attempts are more common among younger adult smokers, becoming progressively less common in older adult smokers. There is no clear relationship between quit attempts by smokers and gender, health insurance status, education or race/ethnicity. Although the prevalence of past-year quit attempts varies significantly by annual household income (p=0.0086), there is no discernible direction to this relationship as there appears to be with age (table 6).

Table 6. Percent of Kansas adult current smokers who tried to quit in the past year, by selected sociodemographic characteristics, BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Percent of current smokers who tried to quit in the past year by age group (p=0.0077).			
18-24 years old	61.6%	52.5% - 70.7%	ǂ
25-34 years old	63.2%	56.7% - 69.8%	ǂ
35-44 years old	54.7%	47.3% - 62.1%	ǂ
45-54 years old	56.9%	51.3% - 62.6%	ǂ
55-64 years old	50.5%	44.8% - 56.3%	ǂ
65+ years old	44.8%	38.4% - 51.3%	ǂ
Percent of current smokers who tried to quit in the past year by annual household income (p=0.0086).			
Less than $15,000	67.5%	60.4% - 74.5%	ǂ
$15,000-$24,999	57.1%	50.7% - 63.5%	ǂ
$25,000-$34,999	46.7%	37.9% - 55.4%	ǂ
$35,000-$49,999	60.3%	53.0% - 67.7%	ǂ
$50,000+	55.6%	50.1% - 61.1%	ǂ
Percent of current smokers who tried to quit in the past year by disability status (p=0.7518).			
Living with a disability	57.8%	52.8% - 62.8%	ǂ
Not living with a disability	56.8%	53.2% - 60.4%	
Percent of current smokers who tried to quit in the past year by gender (p=0.0746).			
Female	59.8%	56.0% - 63.6%	
Male	54.5%	50.2% - 58.9%	
Percent of current smokers who tried to quit in the past year by health care coverage status (p=0.9393).			
Has health insurance	56.9%	53.5% - 60.2%	
No health insurance	57.1%	51.1% - 63.1%	ǂ
Percent of current smokers who tried to quit in the past year by level of education (p=0.0570).			
Some high school	50.4%	42.0% - 58.9%	ǂ
High school diploma or GED	56.1%	51.4% - 60.8%	
Some college or technical school	61.9%	57.1% - 66.7%	
College graduate	55.6%	49.1% - 62.1%	ǂ
Percent of current smokers who tried to quit in the past year by mental health status (p=0.0114).			
14+ days of poor mental health in the past month	64.7%	58.4% - 71.0%	ǂ
<14 days of poor mental health in the past month	55.3%	52.0% - 58.6%	
Percent of current smokers who tried to quit in the past year by physical health status (p=0.1300).			
14+ days of poor physical health in the past month	62.2%	55.4% - 69.1%	ǂ
<14 days of poor physical health in the past month	56.4%	53.1% - 59.6%	
Percent of current smokers who tried to quit in the past year by race/ethnicity group, age-adjusted.			
African American Non-Hispanic	77.1%	66.5% - 87.6%	ǂ
Hispanic	48.7%	33.2% - 64.1%	ǂ
Multiracial Non-Hispanic	*	*	
Other Race Non-Hispanic	70.2%	54.4% - 86.0%	ǂ
White Non-Hispanic	53.3%	50.2% - 56.3%	
Percent of current smokers who tried to quit in the past year by veteran status (p=0.1252).			
Veteran	51.2%	43.4% - 59.0%	ǂ
Non Veteran	57.7%	54.6% - 60.9%	

* RSE > 30%, numerator < 5 or denominator < 50.
ǂ margin of error > 5%.

Time Since Last Cigarette Among Former Smokers

Cigarette smoking is a behavior that can be difficult to quantify. By assessing how long it has been since former smokers had their last cigarette, one can better understand smoking cessation and articulate changes in cessation behavior. More than half (58%) of Kansas adult former smokers had their last cigarette 10 or more years ago. An additional 28.4 percent had their last cigarette one to 10 years ago (figure 4).

Figure 4. Time since last cigarette among former smokers, BRFSS 2012

Within the past month, 3.9%

1 month to less than 3 months ago, 2.8%

3 months to less than 6 months ago, 2.4%

6 months to less than 1 year ago, 4.3%

10 years or more ago, 58.2%

1 year to less than 5 years ago, 17.9%

5 years to less than 10 years ago, 10.5%
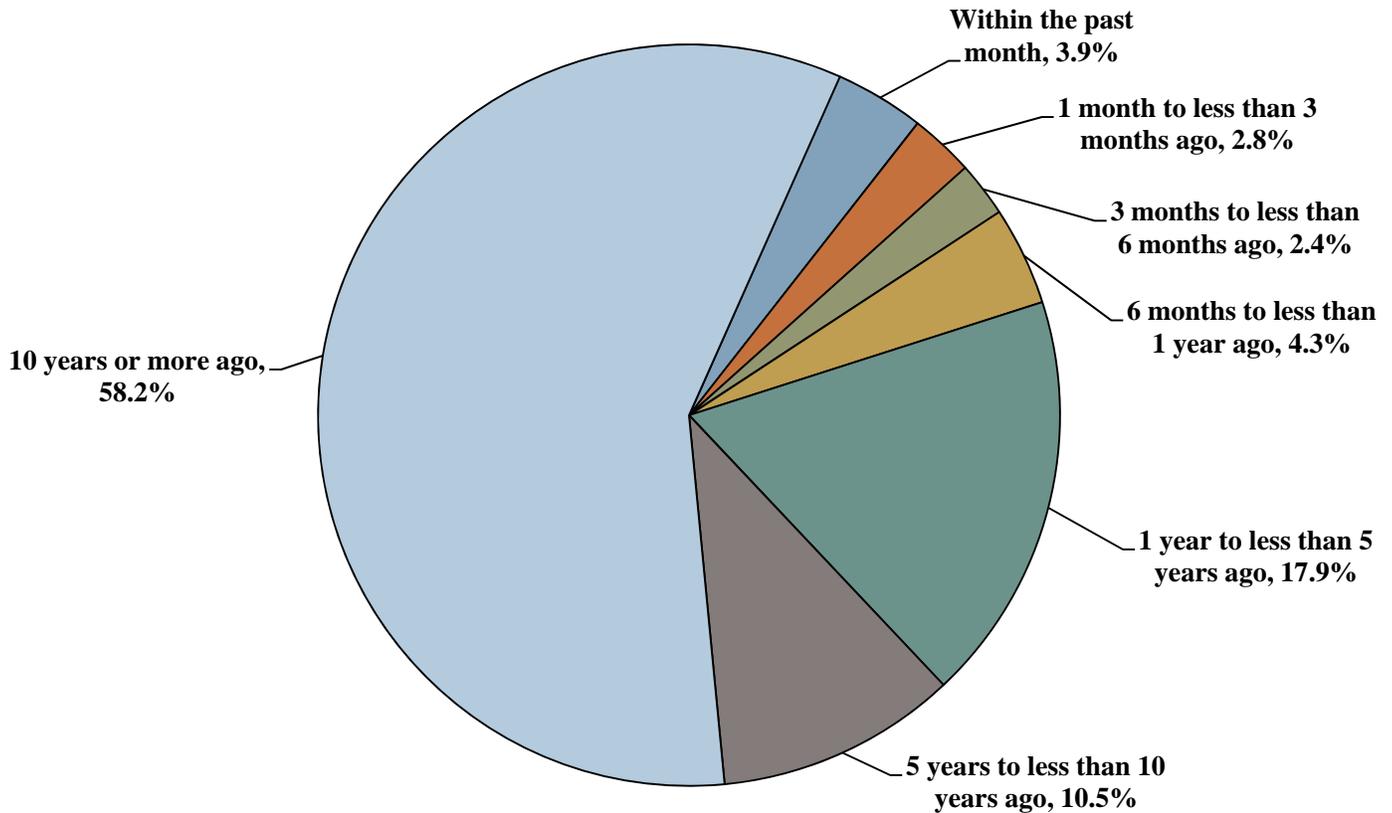
Table 7 describes former smokers who had their last cigarette in the past year. Overall, 13.4 percent (95% CI: 11.7%-15.1%) of adult former smokers had their last cigarette in the past year. The percentage of former smokers who had their last cigarette in the past 12 months was higher among younger adults than older adults. There is no clear relationship between time since last cigarette and education. The percentage of adult former smokers who had their last cigarette in the past 12 months was higher among those with an annual income of less than $15,000 than those with an annual income of $50,000 or more and among those with no health insurance than those with health insurance.

Table 7. Percent of Kansas adult former smokers who had their last cigarette in the past year by selected sociodemographic characteristics , BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Percent of former smokers who last smoked in the past year by age group (p=<.0001).			
18-24 years old	*	*	
25-34 years old	**31.7%**	23.9% - 39.4%	ǂ
35-44 years old	**18.4%**	13.1% - 23.6%	ǂ
45-54 years old	**14.7%**	10.7% - 18.6%	
55-64 years old	**8.5%**	5.9% - 11.1%	
65+ years old	**2.1%**	1.3% - 3.0%	
Percent of former smokers who last smoked in the past year by annual household income (p=0.0012).			
Less than $15,000	**25.9%**	17.2% - 34.6%	ǂ
$15,000-$24,999	**14.8%**	10.1% - 19.4%	
$25,000-$34,999	**14.7%**	9.1% - 20.2%	ǂ
$35,000-$49,999	**13.6%**	9.4% - 17.9%	
$50,000+	**10.3%**	8.0% - 12.6%	
Percent of former smokers who last smoked in the past year by disability status (p=0.1449).			
Living with a disability	**11.2%**	8.4% - 14.0%	
Not living with a disability	**13.9%**	11.8% - 16.0%	
Percent of former smokers who last smoked in the past year by gender (p=0.0115).			
Female	**15.9%**	13.2% - 18.5%	
Male	**11.3%**	9.1% - 13.6%	
Percent of former smokers who last smoked in the past year by health care coverage status (p=0.0003).			
Has health insurance	**12.1%**	10.4% - 13.8%	
No health insurance	**22.8%**	16.1% - 29.4%	ǂ
Percent of former smokers who last smoked in the past year by level of education (p=0.0749).			
Some high school	**12.5%**	6.5% - 18.5%	ǂ
High school diploma or GED	**14.6%**	11.3% - 17.9%	
Some college or technical school	**15.2%**	12.1% - 18.3%	
College graduate	**9.4%**	6.8% - 11.9%	
Percent of former smokers who last smoked in the past year by mental health status (p=0.0002).			
14+ days of poor mental health in the past month	**22.8%**	16.2% - 29.4%	ǂ
<14 days of poor mental health in the past month	**12.1%**	10.4% - 13.9%	
Percent of former smokers who last smoked in the past year by physical health status (p=0.5539).			
14+ days of poor physical health in the past month	**14.8%**	10.2% - 19.4%	
<14 days of poor physical health in the past month	**13.3%**	11.4% - 15.2%	
Percent of former smokers who last smoked in the past year by race/ethnicity group, age-adjusted.			
African American, Non-Hispanic	*	*	
Hispanic	*	*	
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	*	*	
White, Non-Hispanic	**20.5%**	17.2% - 23.7%	
Percent of former smokers who last smoked in the past year by veteran status (p=0.0110).			
Veteran	**9.1%**	5.9% - 12.2%	
Non Veteran	**14.5%**	12.5% - 16.5%	

* RSE > 30%, numerator < 5 or denominator < 50.
ǂ margin of error > 5%.

Indoor Clean Air

Smoke-free policies are an effective way to reduce the health harms caused by smoking.[v] In mid 2010, Kansas became the 27th state to enact a statewide smoke-free law known as the Kansas Indoor Clean Air Act (KICAA). KICAA prohibits smoking in most indoor public places such as restaurants, bars, workplaces and shopping malls. Studies have shown that support for these laws tends to increase following implementation and that, in addition to reducing exposure to secondhand smoke, smoke-free laws encourage smokers to quit. [vi] In 2012, the BRFSS included a question assessing public support for KICAA.

To assess public support, the Kansas 2012 BRFSS asked, "The Kansas State Legislature passed a statewide smoking ban in 2010 that prohibits smoking in indoor public places. Do you support or oppose this law?"

Figure 5. Percent of Kansas adults that support or oppose the 2010 Kansas Clean Indoor Air Act, BRFSS 2012

Oppose the 2010 Kansas Indoor Clean Air Act, 14.1%

Do not know or are uncertain, 4.1%

Support the 2010 Kansas Indoor Clean Air Act, 76.9%

Do not care or are indifferent, 4.9%
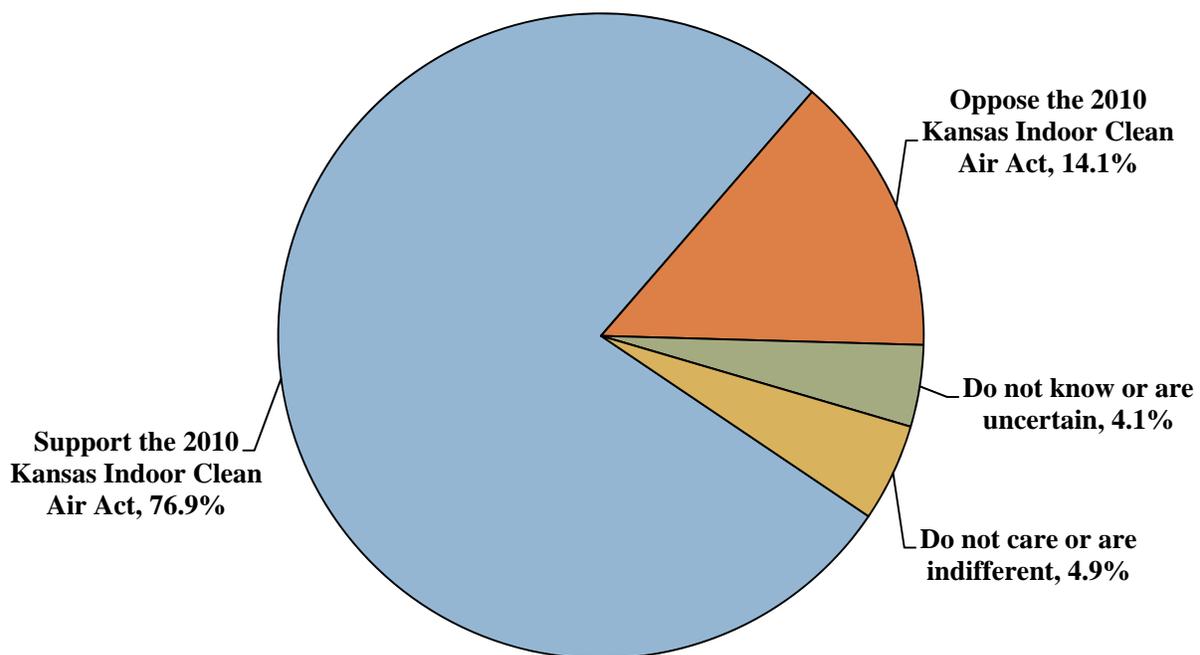
The 77 percent (95% CI: 75.4%-78.5%) of Kansas adults who support KICAA is broken down into subpopulations in table 8. There is more support among females than males for KICAA and among adults with health insurance than among adults without health insurance. Support for KICAA also appears to increase with higher levels of annual income and education. There is little variation in the level of support for KICAA in all indoor public places by age group.

Interestingly, half of current smokers (51.2%, 95% CI: 46.9%-55.6%) in Kansas support KICAA. Of the remaining 48.8 percent, 12.2 percent were uncertain or indifferent toward the 2010 KICAA, leaving only 36.6 percent of current smokers who actually oppose KICAA.

Table 7. Percent of Kansas adults who support the 2010 Kansas Indoor Clean Air Act by selected sociodemographic characteristics, BRFSS 2012

Demographic Group	Weighted Percent	95% CI	Flag
Percent of Kansas adults that support the 2010 KICA by age group (p=0.0060)			
18-24 years old	**77.4%**	71.5% - 83.3%	ǂ
25-34 years old	**70.3%**	65.7% - 74.9%	
35-44 years old	**78.0%**	73.9% - 82.1%	
45-54 years old	**76.8%**	73.4% - 80.2%	
55-64 years old	**77.8%**	75.0% - 80.7%	
65+ years old	**80.9%**	78.8% - 83.1%	
Percent of Kansas adults that support the 2010 KICA by annual household income (p=<.0001)			
Less than $15,000	**65.3%**	59.1% - 71.5%	ǂ
$15,000-$24,999	**71.5%**	66.9% - 76.1%	
$25,000-$34,999	**75.1%**	70.3% - 80.0%	
$35,000-$49,999	**73.7%**	69.4% - 78.0%	
$50,000+	**82.9%**	80.8% - 85.1%	
Percent of Kansas adults that support the 2010 KICA by disability status (p=<.0001)			
Living with a disability	**71.3%**	68.0% - 74.5%	
Not living with a disability	**78.5%**	76.7% - 80.3%	
Percent of Kansas adults that support the 2010 KICA by gender (p=<.0001)			
Female	**83.2%**	81.5% - 84.9%	
Male	**70.3%**	67.7% - 72.9%	
Percent of Kansas adults that support the 2010 KICA by health care coverage status (p=<.0001)			
Has health insurance	**78.7%**	77.1% - 80.2%	
No health insurance	**68.5%**	63.4% - 73.6%	ǂ
Percent of Kansas adults that support the 2010 KICA by level of education (p=<.0001)			
Some high school	**70.4%**	63.5% - 77.3%	ǂ
High school diploma or GED	**72.0%**	68.9% - 75.0%	
Some college or technical school	**74.7%**	71.9% - 77.5%	
College graduate	**87.2%**	85.4% - 89.0%	
Percent of Kansas adults that support the 2010 KICA by mental health status (p=<.0001)			
14+ days of poor mental health in the past month	**67.6%**	62.3% - 73.0%	ǂ
<14 days of poor mental health in the past month	**78.2%**	76.5% - 79.8%	
Percent of Kansas adults that support the 2010 KICA by physical health status (p=0.0001)			
14+ days of poor physical health in the past month	**68.6%**	63.6% - 73.6%	
<14 days of poor physical health in the past month	**77.9%**	76.3% - 79.6%	
Percent of Kansas adults that support the 2010 KICA by race/ethnicity group, age-adjusted			
African American Non-Hispanic	**83.9%**	78.8% - 89.0%	ǂ
Hispanic	**81.7%**	75.1% - 88.4%	ǂ
Multiracial Non-Hispanic	**75.6%**	62.9% - 88.2%	ǂ
Other Race Non-Hispanic	**83.0%**	74.4% - 91.7%	ǂ
White Non-Hispanic	**75.1%**	73.2% - 76.9%	
Percent of Kansas adults that support the 2010 KICA by veteran status (p=<.0001)			
Veteran	**68.9%**	64.3% - 73.5%	
Non Veteran	**78.0%**	76.3% - 79.6%	

* RSE > 30%, numerator < 5 or denominator < 50.
ǂ margin of error > 5%.

Appendix A
Crude Race/Ethnicity Subpopulation Prevalence Estimates

Demographic Group	Weighted Percent	95% CI	Flag
Current smoking status by race/ethnicity group (p=<.0001).			
African American, Non-Hispanic	**22.4%**	16.7% - 28.1%	‡
Hispanic	**10.7%**	7.4% - 14.0%	
Multiracial, Non-Hispanic	**33.0%**	22.4% - 43.6%	‡
Other Race, Non-Hispanic	**23.8%**	17.0% - 30.5%	‡
White, Non-Hispanic	**19.7%**	18.7% - 20.8%	
Former smoking status by race/ethnicity group (p=<.0001).			
African American, Non-Hispanic	**18.2%**	13.9% - 22.5%	
Hispanic	**17.2%**	12.9% - 21.5%	
Multiracial, Non-Hispanic	**23.2%**	14.8% - 31.6%	‡
Other Race, Non-Hispanic	**14.0%**	9.2% - 18.8%	
White, Non-Hispanic	**25.3%**	24.3% - 26.3%	
Never smoking status by race/ethnicity group (p=<.0001).			
African American, Non-Hispanic	**59.4%**	53.2% - 65.7%	‡
Hispanic	**72.1%**	67.1% - 77.2%	‡
Multiracial, Non-Hispanic	**43.8%**	33.4% - 54.2%	‡
Other Race, Non-Hispanic	**62.2%**	54.8% - 69.6%	‡
White, Non-Hispanic	**54.9%**	53.7% - 56.2%	
Male smokeless tobacco use by race/ethnicity group (p=0.0007).			
African American, Non-Hispanic	*	*	
Hispanic	**8.1%**	3.6% - 12.7%	
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	*	*	
White, Non-Hispanic	**12.0%**	10.6% - 13.4%	
Percent of Kansas adults who have ever used e-cigarettes by race/ethnicity group (p=0.0024).			
African American, Non-Hispanic	*	*	
Hispanic	*	*	
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	*	*	
White, Non-Hispanic	**9.1%**	7.9% - 10.2%	
Percent of current smokers who tried to quit in the past year by race/ethnicity group (p=0.0121).			
African American, Non-Hispanic	**76.8%**	64.6% - 89.1%	‡
Hispanic	**60.1%**	43.9% - 76.3%	‡
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	**71.4%**	56.0% - 86.8%	‡
White, Non-Hispanic	**54.4%**	51.3% - 57.5%	
Percent of former smokers who last smoked in the past year by race/ethnicity group (p=0.0024).			
African American, Non-Hispanic	**14.3%**	6.0% - 22.6%	‡
Hispanic	*	*	
Multiracial, Non-Hispanic	*	*	
Other Race, Non-Hispanic	*	*	
White, Non-Hispanic	**12.9%**	11.2% - 14.6%	
Percent of Kansas adults that support the 2010 KICA by race/ethnicity group (p=0.0242)			
African American, Non-Hispanic	**83.5%**	77.7% - 89.3%	‡
Hispanic	**83.7%**	77.5% - 89.9%	‡
Multiracial, Non-Hispanic	**73.8%**	60.1% - 87.5%	‡
Other Race, Non-Hispanic	**83.5%**	74.4% - 92.6%	‡
White, Non-Hispanic	**75.6%**	73.9% - 77.3%	

* RSE > 30%, numerator < 5 or denominator < 50.
‡ margin of error > 5%.

Appendix B
Technical Notes

2011 Methodology Changes

Beginning in 2011, the CDC adopted iterative proportional fitting, or "raking," in place of post stratification weighting as the sole BRFSS statistical weighting method. In compliance with the current CDC guidelines regarding BRFSS sampling methodology, the Kansas BRFSS program implemented dual frame sampling methodology for the 2011 and 2012 Kansas BRFSS surveys. The dual frame sampling methodology includes two components: 1) landline telephone service and 2) cellular telephone-only service. These two adjustments are in response to growing cellular telephone-only service and provide improved estimates.

Because of the change in methodology it is not possible to determine whether a 2012 estimate is significantly different (or not significantly different) from estimates prior to 2011.[vii] For this reason, this report only compares 2012 measures to 2011 measures.

Additional reading on this topic can be found at: http://www.kdheks.gov/brfss/newmethod.html.

95% Confidence Intervals

A confidence interval is a range of values that is likely to include an unknown population parameter, the range being calculated from a given set of sample data. If independent samples are taken repeatedly from the same population, and a confidence interval calculated for each sample, then a certain percentage of the intervals will include the unknown population parameter.

Data results from the BRFSS survey are estimates of actual population parameters. A 95 percent confidence interval is calculated for estimates obtained from the BRFSS sample, which is interpreted as, "We are 95 percent confident that the interval contains the true population value of the indicator." The smaller the range between the lower limit and upper limit of the confidence interval, the more precise the estimated percentage. BRFSS data produces highly reliable estimates and the interpretation of data is based on the application of 95 percent confidence intervals.

Data Weighting Information

Data weighting is an important statistical process that attempts to remove bias in the sample. It corrects for differences in the probability of selection due to non-response and non-coverage errors. Data weighting also allows the generalization of findings to the whole population, not just those who respond to the survey. Once BRFSS data are collected, statistical procedures are used to make sure the estimates of health measures generated by the analysis of survey data are representative of the population for each state and/or local area.

Interpretation of Statistics

In general, the correct interpretation of these statistics involves specifying the **timeframe** and inserting the [weighted percentage] into the appropriate indicator. For instance, under "Cigarette Smoking," we can see the following from looking at figure 1:

> **In 2012**, [19.4%] of adult Kansans were current cigarette smokers.

For the subpopulation analysis we follow a similar formula that also specifies the *subpopulation*. In Table 1, for instance, we find the following:

> **In 2012**, [21.1%] of *male* adult Kansans were current cigarette smokers.

[i] U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General, 2014*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014.

[ii] Centers for Disease Control and Prevention. State-Specific Smoking-Attributable Mortality and Years of Potential Life Lost – United States, 2000-2004. *MMWR*. 2009; 58:2.

[iii] Centers for Disease Control and Prevention. *Data Highlights 2006*. Department of Health and Human Services; 2006.

[iv] Centers for Disease Control and Prevention. Electronic Cigarette Use Among Middle and High School Students — United States, 2011–2012. *MMWR* 2013;62:729-730.

[v] U.S. Department of Health and Human Services. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2006.

[vi] Fong GT, Hyland A, Borland R, Hammond D, Hastings G, McNeill A, Anderson S, Cummings KM, Allwright S, Mulcahy M, Howell F, Clancy L, Thompson ME, Connolly G & Driezen P. Reductions in tobacco smoke pollution and increases in support for smoke-free public places following the implementation of comprehensive smoke-free workplace legislation in the Republic of Ireland: findings from the ITC Ireland/UK Survey. *Tob Control*. 2006; 15 Suppl 3: iii51-iii58.

[vii] Kansas Department of Health and Environment, Bureau of Health Promotion. Technical Notes. 2012. Available at: http://www.kdheks.gov/brfss/technotes.html. Accessed January 29, 2014.