

# Impact of Kentucky Governor Beshear's Tobacco-Free Executive Order

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*Official Report*

University of Kentucky, College of Nursing  
Kentucky Center for Smoke-Free Policy

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## Executive Summary

Kentucky Governor Steven L. Beshear signed Executive Order 2014-747 on September 4, 2014. The order, which took effect in November 2014, prohibits the use of all tobacco products including electronic cigarettes on all property owned or operated by the Executive Branch. The Executive Order included references to high rates of tobacco use among state employees, the increased healthcare costs associated with tobacco use, and policy rationales for tobacco-free policies. Through a contract with the Kentucky Department for Public Health, the Kentucky Center for Smoke-free Policy (KCSP) evaluated the impact of the Executive Order on tobacco use, quitting tobacco, and adherence to the policy. The purpose of this report is to summarize the results.

*Methodology.* In March and April 2015, 27,000 employees of the Kentucky Executive Branch were invited to participate in two similar surveys designed to assess reported tobacco use, tobacco users' plans to quit, and adherence to the tobacco-free policy on Executive Branch property.

*Tobacco Use Rates Declined Significantly among Executive Branch Employees.* Cigarette and other tobacco product use among employees changed significantly from March to August 2015. Current cigarette use was lower by 18%; smokeless tobacco was lower by 26%; and e-cigarette use was lower by 23%. Based on estimates of tobacco use before the policy, all tobacco product use (except cigars) declined steadily over time. While there was no change over time in the percentage of current cigarette smokers who planned to quit in the next 30 days, there was a significant change, from 6.4% to 10.3%, in planning to quit among the other tobacco product users. There was no change in quit attempts over time, and fewer than 3 in 10 tobacco users take advantage of quitting resources. On average, 63% of cigarette smokers and 70% of other tobacco users report adhering to the tobacco-free policy, and this did not change over time. However, the *perception* of adherence to the tobacco-free policy was lower in August than in March 2015.

The findings of this report demonstrate that cigarette smoking and other tobacco product use by Executive Branch employees has significantly declined since the Executive Order took effect in November 2014. Consequently, the Commonwealth has the potential for long-term health care cost avoidance as a result of lower tobacco use rates among members of the Kentucky Employees Health Plan, in addition to the other documented health benefits of tobacco-free policies.

## Purpose

This report describes the impact of Kentucky Governor Steven Beshear’s Executive Order 2014-747 (Appendix A). The order prohibits the use of all tobacco products on property controlled by the Executive Branch of the Commonwealth of Kentucky. An anonymous online survey distributed in March 2015 and again in August 2015 evaluated state employees’ self-reported tobacco use, plans to quit using tobacco, and their own and others’ actual and perceived adherence to the policy.

We measured the following outcomes:

- Tobacco use
- Plans to quit using tobacco
- Adherence to the tobacco-free policy

## Background

On September 4, 2014, Kentucky Governor Steven Beshear signed Executive Order 2014-747 prohibiting the use of cigarettes, cigars, electronic cigarettes, and all other smoked or smokeless tobacco products on all property, indoors and outdoors, that is owned, leased, or contracted by the Executive Branch of the Commonwealth of Kentucky. Previously, only smoking inside the buildings and common areas occupied by Executive Branch employees had been prohibited.

The Executive Order is designed to “protect the health, safety, and welfare of the citizens and the employees of the Commonwealth of Kentucky.” The policy is consistent with the 2014 U.S. Surgeon General’s report stating there is no risk-free exposure to secondhand smoke (SHS). SHS is a cause of heart disease, stroke, lung cancer, emphysema, and a risk factor for a variety of other serious medical conditions including nearly all forms of cancer,<sup>1</sup> and needs to be avoided wherever possible. Given that tobacco-using employees incur healthcare costs approximately 20% higher than those who do not use tobacco, a tobacco-free workplace policy has the potential to reduce Kentucky’s healthcare costs and quality of life.

There is little research on tobacco-free government property policies in other states. There is substantial research, however, on smoke- and tobacco-free policies in workplaces and on college campuses. Most studies affirm the positive effects of tobacco-free policies. Fichtenberg and Glantz<sup>2</sup> found that smoke-free workplace policies increase the rate of smoking cessation and employees smoke fewer cigarettes per day. In only one year after adopting a smoke-free hospital policy, Gadomski, Stayton, Krupa and Jenkins<sup>3</sup> reported a 6% drop in employee smoking. Another study showed that employees of a tobacco-free North Carolina hospital were more likely to attempt to quit using tobacco than members of the general public.<sup>4</sup>

Research on college campuses also lends support to the positive effects of tobacco-free policies. Fallin, Roditis, and Glantz<sup>5</sup> found that tobacco-free policies on eight California college campuses reduced students' exposure to SHS, decreased the number of tobacco users on campus, and decreased the number of students intending to use tobacco on campus. More comprehensive policies (i.e., those prohibiting all tobacco products vs. only cigarettes and those without designated smoking areas) were more effective in reducing SHS exposure and intent to use tobacco. Similarly, students at Indiana University Bloomington, with a tobacco-free policy, were far less likely to smoke than those at Purdue without a policy.<sup>6</sup> Lee, Ranney, and Goldstein<sup>7</sup> reported that 100% smoke- or tobacco- free policies at 19 North Carolina community colleges resulted in fewer cigarette butts near doorways than partial or no policies. Finally, Lechner, Meier, Miller, Wiener, and Fils-Aime<sup>8</sup> found that frequent smoking on Oklahoma State University's campus decreased significantly one year following policy implementation; however, it took three years for occasional, or less frequent, smoking to decrease significantly.

## **Methodology**

Approximately 27,000 Commonwealth of Kentucky employees were invited to participate in two anonymous online surveys designed to measure tobacco use, quitting behaviors, and adherence to the tobacco-free policy at the worksite. Participants who reported using tobacco products in the past 30 days were considered current users. Participants were asked to provide personal information including sex, race/ethnicity, job title, length of employment, and county of employment.

The first survey was distributed via email to 27,000 state employees in March 2015, four months after the policy went into effect. A second, nearly identical survey was sent to the same sample of state employees five months later in August 2015. In each case the email survey invitation was distributed by the Personnel Cabinet in partnership with the Kentucky Office of Health Policy. A reminder email was sent one week after the initial email.

The survey was administered using Qualtrics software (version 9340538) Copyright ©2015. Qualtrics is a secure survey administration and database software package. The survey was completed only by individuals who received a direct link to the survey via email. All responses were anonymous, and no identifying information was collected from survey participants. Data are reported in aggregate for summary purposes.

A total of 4,854 individuals responded to the March 2015 survey, an 18% response rate. A total of 3,522 individuals responded to the August 2015 survey, a 13% response rate.

## Timeline

Although the first survey was not distributed until March 2015, we estimated employee tobacco use before November 2014 by examining past reported tobacco use from the March survey. In March, those who reported smoking or using other tobacco products up to 7-11 months ago were estimated users before the policy took effect.

## Results

### I. Demographics

Table 1. Personal characteristics of survey respondents over time

	March ( <i>n</i> = 4,854)	August ( <i>n</i> = 3,522)	<i>p</i>
	Mean (SD) or <i>n</i> (%)	Mean (SD) or <i>n</i> (%)	
<b>Age</b>	47.14 (10.69)	48.11 (10.61)	<.001
<b>Sex</b>			.27
<b>Male</b>	1,712 (41.0%)	1,265 (41.2%)	
<b>Female</b>	2,440 (58.5%)	1,798 (58.6%)	
<b>Transgender</b>	21 (0.5%)	8 (0.3%)	
<b>Race/ethnicity</b>			.20
<b>White/non-Hispanic</b>	3,761 (78.6%)	2,769 (78.8%)	
<b>Other</b>	1,024 (21.4%)	703 (20.2%)	
<b>Region</b>			.52
<b>Purchase</b>	102 (2.6%)	78 (2.7%)	
<b>Pennyrile</b>	187 (4.8%)	140 (4.9%)	
<b>Green River</b>	85 (2.2%)	74 (2.6%)	
<b>Barren River</b>	157 (4.1%)	116 (4.1%)	
<b>Lincoln Trail</b>	102 (3.9%)	77 (2.7%)	
<b>KIPDA</b>	374 (9.7%)	282 (9.9%)	
<b>Northern Kentucky</b>	152 (3.9%)	93 (3.2%)	
<b>Buffalo Trace</b>	42 (1.1%)	31 (1.1%)	
<b>Gateway</b>	67 (1.7%)	41 (1.4%)	
<b>FIVCO</b>	71 (1.8%)	42 (1.5%)	
<b>Big Sandy</b>	130 (3.4%)	93 (3.3%)	
<b>Kentucky River</b>	78 (2.0%)	54 (1.9%)	
<b>Cumberland Valley</b>	140 (3.6%)	85 (3.0%)	
<b>Lake Cumberland</b>	148 (3.8%)	77 (2.7%)	
<b>Bluegrass</b>	2,018 (52.4%)	1,568 (54.8%)	

Note: Numbers vary due to missing data; percentages may not sum to 100 due to rounding

- Participants completing the survey in March and August were similar in personal characteristics except for age ( $p < .001$ ). Employees who responded in August were slightly older than those in the March sample.

## II. Tobacco Use

### *Current Tobacco Use*

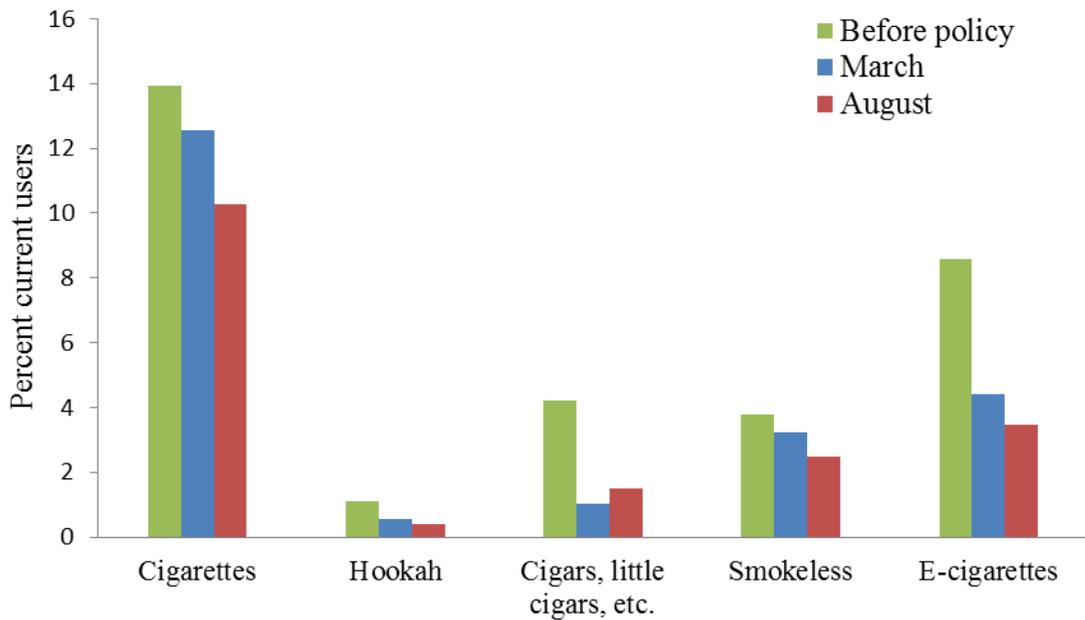
Table 2. Percent current tobacco use by product over time

	<b>March 2015</b> <i>(n = 4,854)</i>	<b>August 2015</b> <i>(n = 3,522)</i>	<b>% change</b>	<b><i>p</i></b>
<b>Cigarettes</b>	12.6%	10.3%	18% ↓	<b>.002</b>
<b>Hookah</b>	0.5%	0.4%	25% ↓	.39
<b>Cigars, little cigars, etc.</b>	1.0%	1.5%	45% ↑	.063
<b>Smokeless</b>	3.2%	2.5%	26% ↓	<b>.053</b>
<b>E-cigarettes</b>	4.4%	3.5%	23% ↓	<b>.040</b>

- Employees were less likely to use cigarettes, smokeless tobacco, and e-cigarettes in August 2015 compared to March 2015.
- Cigarette use was lower by 18%.
- Smokeless tobacco was lower by 26%.
- E-cigarette use was lower by 23%.

*Estimated Tobacco Use over Time*

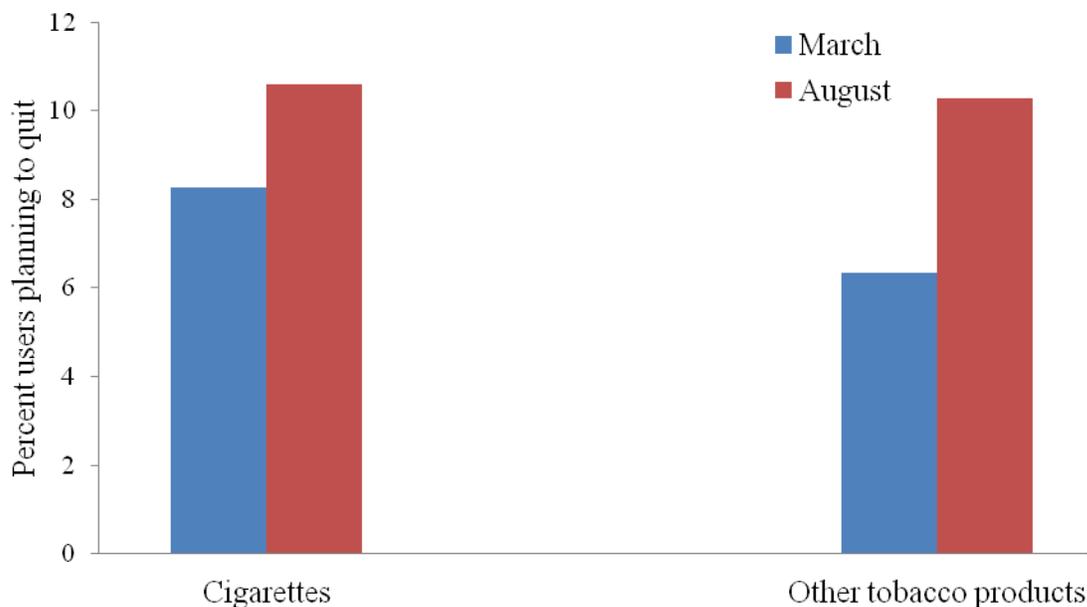
Figure 1. Estimated percent of current users by tobacco product over time



- Compared to *estimated use* before the policy went into effect, current use of cigarettes, hookah, smokeless tobacco, and e-cigarettes declined over time.

### III. Plans to Quit Using Tobacco

Figure 2. Percent of current users planning to quit in the next 30 days over time



- There was no significant change over time in the percentage of current cigarette smokers who planned to quit in the next 30 days (8.3% in March; 10.6% in August).
- The percentage of current other tobacco product users who plan to quit in the next 30 days changed significantly from 6.4% to 10.3% over time ( $p = .05$ ).

#### *Quit Smoking Attempts*

- In both March and August 2015, 32% of those who reported smoking in the last 6 months said they had tried to quit smoking in the past 6 months.

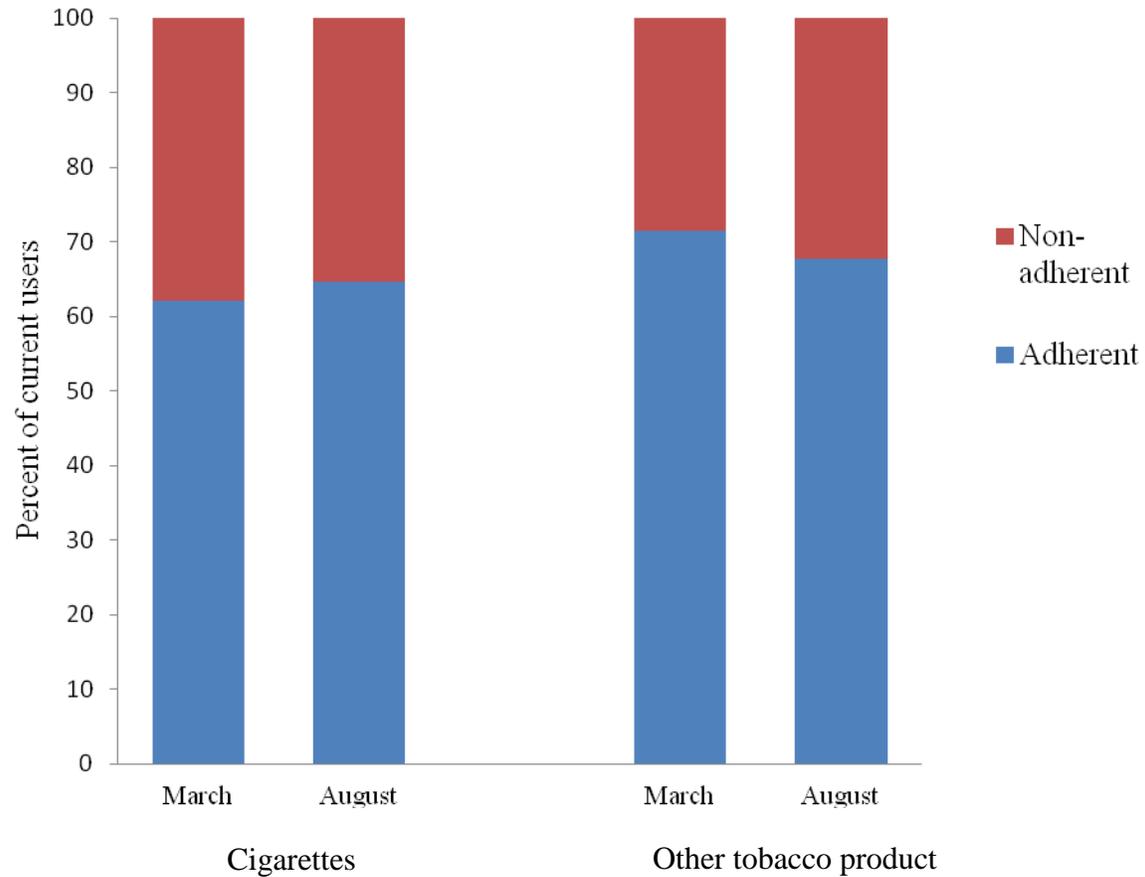
#### *Asked for Help to Quit*

- Among those who had smoked in the last 6 months, 24% of March survey respondents said they had attended a smoking cessation class, talked to a healthcare provider about quitting, or called 1-800-QUIT-NOW in the past 6 months. There was not a significant difference in August (28%;  $p = .13$ ).

## IV. Adherence to the Policy

### *Past 7 Days*

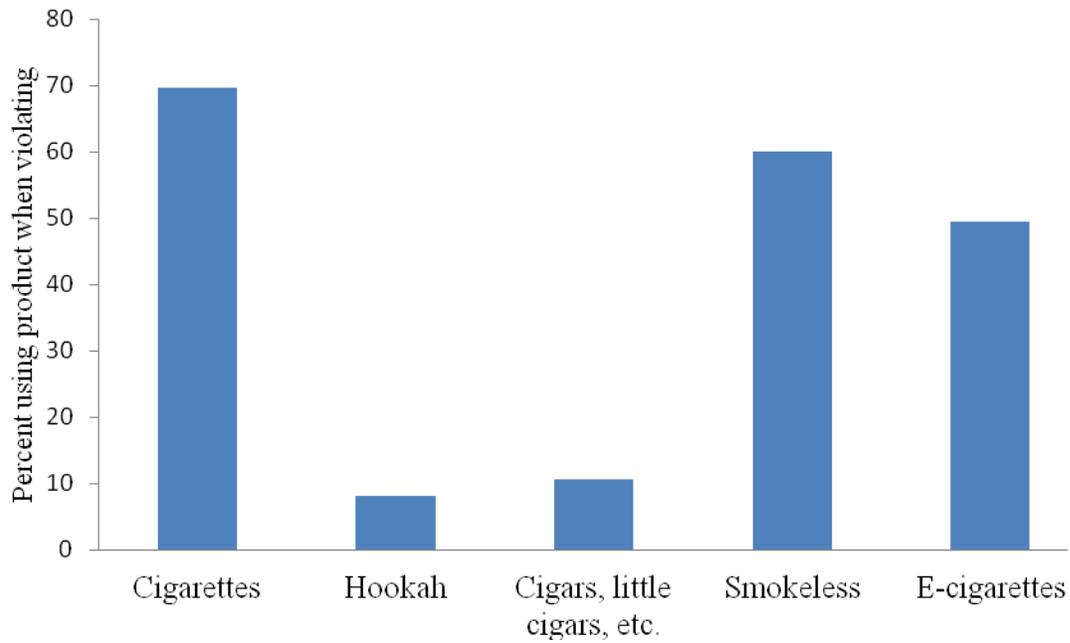
Figure 3. Policy adherence by current tobacco product use



- There was no significant change over time in the percentage of current cigarette users who reported adhering to the policy (62.1% in March; 64.7% in August)
- Similarly, there was no change over time in the percentage of current other tobacco product users who adhered to the policy (71.4% in March; 67.7% in August).

### *Violators by Type of Product*

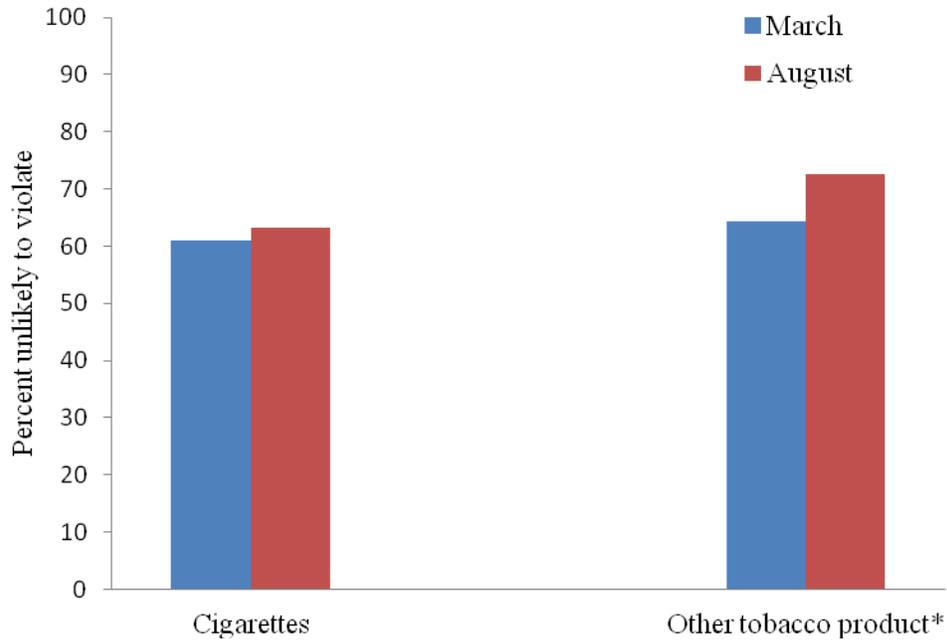
Figure 4. Percent of tobacco products used when violating the policy



- Of those who violated the policy, most reported using cigarettes, followed by smokeless tobacco, and e-cigarettes.

### *Intent to Use Tobacco at Worksite in the Next Six Months*

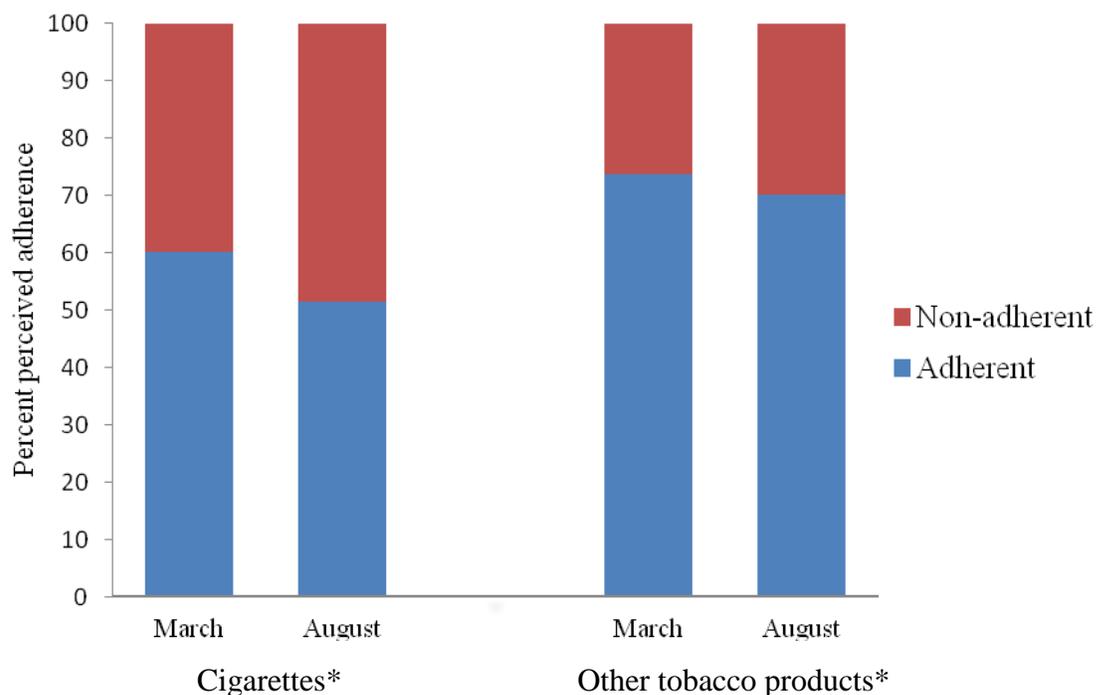
Figure 5. Percent unlikely to violate the policy over time



\* denotes statistical significance over time

- Of cigarette smokers, approximately 60% reported they were unlikely to smoke on the worksite in the next 6 months. There was no difference over time.
- Other tobacco users were more *unlikely* to use tobacco on the worksite over time, increasing from 64.3% in March to 72.6% in August.

Figure 6. Perceived adherence to the policy by product type over time



- Among both tobacco users and non-users, the perception of adherence to the tobacco-free policy was lower in August compared to March 2015.
- Overall, perceived adherence to the policy for other tobacco products was higher compared to cigarettes.

*\*Note.* Comparisons over time were statistically significant for both cigarettes ( $p < .001$ ) and other tobacco products ( $p < .001$ ). This is likely due to large sample sizes in the chi-square test of association ( $n = 7,845$  and  $7,811$  respectively). Percent changes over time were small (14% and 5% respectively) and may not be clinically meaningful.

## Discussion

### Tobacco Use

Cigarette and other tobacco product use among employees changed significantly from March to August 2015. Current cigarette use was lower by 18%; smokeless tobacco was lower by 26%; and e-cigarette use was lower by 23%.

Based on estimates of tobacco use before the policy took effect, use of cigarettes, hookah, smokeless tobacco, and e-cigarettes by Executive Branch employees has dropped steadily over time.

### Quitting

There was no change over time in percentage of current cigarette smokers who planned to quit in the next 30 days. However, significantly more current tobacco users planned to quit in the next 30 days, from 6.4% in March to 10.3% in August.

Fewer than 3 in 10 tobacco users took advantage of quitting resources: 24% of current tobacco users in March and 28% in August reported they had attended a smoking cessation class, talked to a healthcare provider, or called 1-800-QUIT-NOW in the previous 6 months. These findings reinforce the need to promote and offer tobacco treatment resources for all Executive Branch employees and at all worksites.

### Policy Adherence

It is promising that the majority of tobacco users report adhering to the policy. On average, 63% of cigarette smokers and 70% of other tobacco users report adhering to the policy, and this did not change over time. However, the *perception* of adherence to the tobacco-free policy among all employees was lower in August compared to March 2015. Evidence-based compliance strategies are needed on all Executive Order property in order to promote and maintain a successful tobacco-free policy.<sup>11,12</sup> Only when tobacco-free policies are implemented with “clear messaging, consistency, and consequences” (p. 264) are they effective.<sup>9</sup>

### Conclusions

The findings of this evaluation support implementation of comprehensive tobacco-free policies and confirm the achievement of one of the primary goals of the Executive Order: to positively impact tobacco use among Executive Branch employees, both on and off Executive Branch property. Since policy implementation in November 2014, all tobacco product use (except cigars) has declined steadily over time. It is promising that other tobacco users were more likely over time to intend to quit in the next 30 days. However, there was no change in planning to quit

among cigarette smokers; nor were there changes in actual quit attempts over time by either group. The majority of tobacco users reported adhering to the policy, but perceived compliance reported by the full sample of Executive Branch employees was lower over time. The tobacco-free policy is on track to achieve the Governor's goals to improve the health of the Commonwealth. Efforts to promote tobacco treatment services for Executive Branch employees and integrate compliance strategies are critical to the continued success of the policy.

## Appendix A: Executive Order 2014-747



STEVEN L. BESHEAR  
GOVERNOR

### EXECUTIVE ORDER

Secretary of State  
Frankfort  
Kentucky

2014-747  
September 4, 2014

**WHEREAS**, pursuant to Executive Order 2006-807, smoking is prohibited in office buildings and common areas occupied by Executive Branch Employees; and

**WHEREAS**, it is the duty of the Governor to protect the health, safety and welfare of the citizens and the employees of the Commonwealth of Kentucky; and

**WHEREAS**, one of the goals of my kyhealthnow initiative is to reduce Kentucky's smoking rate by 10% by 2019; and

**WHEREAS**, Kentucky has the highest rate among all states of adult smokers, the 6<sup>th</sup> highest rate of youth smoking, and leads the nation in cancer deaths; and

**WHEREAS**, over 22,000 members of the state employee health plan, including nearly 5,000 state employees, self reported for plan year 2014 that they were tobacco users, and experience shows that the health care costs for these individuals are approximately 20% higher as compared to those who do not self-report using tobacco; and

**WHEREAS**, I am committed to taking necessary steps to improve the lives and health of the citizens and employees of the state and minimizing their exposure to unnecessary health risks in the workplace and beyond; and

**WHEREAS**, smoking and breathing secondhand smoke causes disease including cancer, heart disease and various respiratory conditions and there is no level of exposure to secondhand smoke considered to be safe; and

**WHEREAS**, a United States Surgeon's General report has recommended the elimination of smoking from indoor spaces to fully protect non-smokers from exposure to secondhand smoke; and



STEVEN L. BESHEAR  
GOVERNOR

EXECUTIVE ORDER

Secretary of State  
Frankfort  
Kentucky

2014-747  
September 4, 2014

**WHEREAS**, the United States Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), has found that the use of smokeless tobacco is known to be a cause of cancer and is associated with leukoplakia, gum disease and tooth decay, and that the use of smokeless tobacco during pregnancy increases the risk of preeclampsia, premature birth and low birth weight; and

**WHEREAS**, recently there has been an increase in the use of electronic cigarettes and vaping devices, including increased use in the workplace and public places and vapor produced from these devices can release chemicals such as nicotine and other tobacco related contaminants, including tobacco-specific nitrosamines and formaldehyde, all of which can adversely impact bystanders; and

**WHEREAS**, the Surgeon General of the Air Force has issued a formal memorandum warning all personnel about the dangers of e-cigarettes and noting that their use is banned wherever the smoking of conventional tobacco cigarettes is prohibited because these devices contain and emit harmful chemicals, are currently unregulated, and pose known and unknown health risks to users and non-users alike; and

**WHEREAS**, according to a study cited by the CDC there is evidence that implementation of a tobacco-free campus policy results in an increase in tobacco quit rates and reduced daily use of tobacco products; and

**WHEREAS**, it is the duty of the Governor and state government, as the Commonwealth's largest employer, to create a vision and establish high achievable standards for the state and its citizens, leading by example to reach and accomplish the goals which have been set:



STEVEN L. BESHEAR  
GOVERNOR

EXECUTIVE ORDER

Secretary of State  
Frankfort  
Kentucky

2014-747  
September 4, 2014

NOW, THEREFORE, I, Steven L. Beshear, Governor of the Commonwealth of Kentucky, under the authority vested in me by the Kentucky Constitution, Sections 69 and 81, and the provisions of KRS 61.165 and KRS 56.463, do hereby Order and Direct the following:

- I. The use of tobacco, any tobacco product, and any electronic cigarette or vaping device shall be prohibited on any and all properties owned, leased or contracted for use by the Executive Branch of the Commonwealth of Kentucky, including but not limited to all buildings or portions of buildings, land and vehicles owned, leased or contracted for use by agencies or instrumentalities of the Executive Branch of the Commonwealth of Kentucky over which the Finance and Administration Cabinet has control.
- II. It is the intent of this order that Skilled Nursing Facilities, Intermediate Care Facilities, Acute Care Hospitals and Personal Care Homes under the administration of the Cabinet for Health and Family Services (CHFS) shall go tobacco-free and e-cigarette or vaping device-free in a manner and timeframe established by the Secretary of the Cabinet for Health and Family Services under guidelines established by CHFS and by the Finance and Administration Cabinet. These guidelines will take into consideration certain federal regulations as well as the specific needs of residents of these facilities.
- III. It is the intent of this order that existing Kentucky veterans centers shall go tobacco-free and e-cigarette or vaping device-free in a manner and timeline established by the Commissioner of the Department of Veterans Affairs and under guidelines established by the Commissioner and by the Finance and Administration Cabinet. These guidelines will respect the specific needs of the residents of these facilities. The new Kentucky veterans center scheduled to open in 2015 will open as a tobacco-free campus.
- IV. The outdoor areas of Kentucky state parks, the Kentucky Horse Park, wildlife management areas, highway rest areas, the Kentucky State Fairgrounds, Bluegrass Station, and training centers operated by the Department of Military Affairs are exempt from this order. The outdoor areas of armories managed or operated by the Department of Military Affairs are exempt from this order only during those time periods when the facilities are rented for use by third parties.
- V. This Executive Order shall not apply to the Judicial and Legislative Branches of Government or Constitutional Officers of the state, but I encourage all of them to follow this example.
- VI. The Secretaries of the Finance and Administration Cabinet, the Personnel Cabinet and all other affected agencies shall take all steps necessary to effectuate the provisions of this Order.



STEVEN L. BESHEAR  
GOVERNOR

EXECUTIVE ORDER

Secretary of State  
Frankfort  
Kentucky

2014-747  
September 4, 2014

For the health and wellbeing of all Kentuckians, I hereby encourage all businesses and educational institutions, public and private, and all state and local government facilities to follow this example.

This Order shall be effective November 20, 2014.



STEVEN L. BESHEAR, GOVERNOR  
Commonwealth of Kentucky



ALISON LUNDERGAN GRIMES  
Secretary of State

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