



# **UNDERSTANDING THE TOBACCO 21 INITIATIVE AND IMPLEMENTATION OF TOBACCO 21 LAWS**



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# UNDERSTANDING THE TOBACCO 21 INITIATIVE AND IMPLEMENTATION OF TOBACCO 21 LAWS

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## Executive Summary

Tobacco use is the leading cause of preventable disease and death in the United States; cigarette smoking causes about one in every five deaths in the U.S. per year. Cigarette smoking is associated with heart disease, stroke, cancer, chronic lung diseases and many other disabling and fatal conditions. An emerging trend is the use of e-cigarettes and other electronic vapor products among youth. Tobacco 21 is a tobacco control initiative which prohibits retailers from selling tobacco products to anyone under age 21. Tobacco 21 raises the minimum age of legal access (MLA) for sale of tobacco products to persons age 21 and older, and reduces access of minors to tobacco products by interrupting the supply available from peers age 18–20. For the purposes of this report, “tobacco products” is defined to include cigarettes, cigars, smokeless tobacco, shisha or hookah tobacco, and electronic vapor products (including e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs and hookah pens).

This report is intended to be an accessible and informative resource for persons interested in understanding the Tobacco 21 initiative and the implementation of Tobacco 21 laws in Kansas and the U.S. This report provides descriptive statistics to understand the initiation and prevalence of smoking, particularly among youth age 15–20; examines the adoption of Tobacco 21 policies as well as local efforts or active discussions in Kansas, such as establishing a task force or setting a policy goal; reviews existing literature on reduction in youth smoking and impact on retail sales after raising the MLA to age 21; and analyzes taxable sales data for convenience stores in gasoline stations to examine the association between Tobacco 21 policies and retail sales.

**Tobacco 21 Rationale.** Youth initiation of use of tobacco products is a major factor in developing and sustaining addiction because the adolescent brain is still in development and is uniquely vulnerable to nicotine and its reinforcing effects. More than four in five (88.2 percent) adult smokers smoked their first cigarette before they turned age 18, and nearly 95 percent started before age 21. The data suggests that if someone is not a regular smoker by age 25, it is highly unlikely they will become one. An emerging trend, as well as a driver for the Tobacco 21 initiative, is the use of e-cigarettes and vapor products among youth. The 2016 U.S. Surgeon General’s report found that e-cigarettes were the most commonly used tobacco product among youth in 2014, surpassing conventional cigarettes. The 2018 National Academies of Sciences, Engineering and Medicine reported that for youth and young adults there is substantial evidence

that e-cigarette use increases the risk of ever using combustible tobacco cigarettes. The models in the March 2015 report by the Institute of Medicine (IOM; now known as the National Academy of Medicine) estimated that if the MLA were raised to age 21 throughout the United States, it would prevent 4.2 million years of life lost to smoking in kids alive today; prevent 16,000 cases of preterm birth and low-birthweight in the first five years of the policy; and reduce smoking initiation rates among youth age 15–17 by 25 percent.

Friends and family (social sources) play a central role in establishing adolescent tobacco use patterns. Adolescents often rely on peers age 18–19, who may still be in high school, to get tobacco products. When examining 2016 Kansas population data, Tobacco 21 policies (if implemented statewide) may impact access to tobacco for the nearly 250,000 Kansans age 15–20 by removing direct access to tobacco products from nearly 129,000 Kansans age 18–20, and interrupting their supply to nearly 120,000 Kansas children age 15–17. According to the Youth Risk Behavior Survey (YRBS), smoking prevalence rates have declined significantly among Kansas high school students (from 21.0 percent in 2005 to 7.2 percent in 2017 for currently smoking cigarettes); however, the 2017 YRBS reported 10.6 percent of Kansas high school students currently using an electronic vapor product and 34.8 percent reported ever using an electronic vapor product. When compared to the rest of the United States, Kansas continues to have lower prevalence rates for the use of tobacco products.

**Adoption of Tobacco 21 policies.** In 2005, Needham, Massachusetts, was the first town in the U.S. to enact a law raising the MLA to age 21. By September 2017, five states had enacted Tobacco 21 laws, including Hawaii, California, New Jersey, Oregon and Maine. As of June 2018, an additional 297 localities in 15 states, the District of Columbia and Guam have increased their MLA to age 21 (including New York City, Chicago, San Antonio, Boston, Cleveland, St. Louis and both Kansas City, Kansas, and Kansas City, Missouri). Three states – Alaska, Alabama and Utah – have set their MLA to age 19. Statewide initiatives have also been proposed in 16 states including Connecticut, Illinois, Iowa, Kentucky, Massachusetts, Michigan, New York, North Carolina, Oklahoma, Pennsylvania, Tennessee, Texas, Utah, Vermont, Washington and West Virginia.

In Kansas, as of August 15, 2018, 21 localities have enacted Tobacco 21 ordinances – specifically increasing the MLA to age 21 for cigarettes, e-cigarettes or tobacco products. This includes most of the greater Kansas City metropolitan area, Iola, Garden City, Shawnee County



(unincorporated), Topeka, and recently, Parsons and Holcomb. The Unified Government of Wyandotte County and Kansas City, Kansas, was the first locality to pass the ordinance and it went into effect on November 26, 2015. The Topeka ordinance, however, is being challenged in the State Supreme Court and currently cannot be enforced.

**Impact on smoking prevalence rates.** There is limited research on the impact of Tobacco 21 on smoking prevalence rates. A study that was published in 2015 showed a decrease in the rate for 30-day cigarette smoking in high school students in Needham, Massachusetts, by 48.1 percent (from 12.9 percent in 2006 to 6.7 percent in 2010) in the four years following implementation of their Tobacco 21 policy. In a recent study, New York City showed a non-significant decrease in the rate for current cigarette use (from 3.8 percent in 2014 to 3.1 percent in 2016) among high school students in the two years following Tobacco 21 implementation. However, when examining e-cigarette use in New York City after the implementation of Tobacco 21, the prevalence rate among high school students increased (from 6.9 percent in 2014 to 14.9 percent in 2016). A recent quasi-experimental study conducted in Kansas found a significant decrease in 30-day cigarette use and 30-day smokeless tobacco use among high school students between 2014–2017; however, there was no significant impact from the Tobacco 21 policy when comparing schools in and outside of Tobacco 21 areas.

Other research has focused on simulations and models of potential impacts if the MLA was set to age 21 across the United States. A model developed in 2007 estimated smoking prevalence for youth age 15–17 would decrease from 22 percent in 2003 to under 9 percent by 2010. The 2015 IOM report projected the smoking prevalence rate overall will decrease significantly even with maintaining MLA at age 18 and previously instituted tobacco control policies (referred to as status quo). However, if MLA were raised to age 21, the IOM model projected the smoking prevalence rate among adults age 18 and older would decrease by 6.4 percent in 2040 (from 10.4 percent in status quo to 9.7 percent in MLA age 21) and by 12.0 percent in 2100 (from 8.7 percent in status quo to 7.7 percent in MLA age 21).

**Impact on Retailers and Enforcement.** Research on the retail sales impact is limited, but the available evidence suggests that the impact was minimal. A preliminary analysis using revenue data from Wyandotte County Tobacco 21 showed no detectable effects on revenue in convenience stores located in gasoline stations. However, the Wyandotte County Health Department completed an enforcement operation two years after Tobacco 21 implementation

and found that 22 percent of the 143 sampled businesses sold tobacco products to persons under age 21. Evaluation of California's Tobacco 21 law found that almost all retailers were aware of the law and a majority supported it; however, one quarter of retailers reported observing "shoulder tap" buys, where an underage individual asks a legal age adult to purchase for them. In a study of New York City's Tobacco 21 policy, there was no significant impact on the number of adolescents buying cigarettes or having identification (ID) checked and there was a non-significant increase in the purchase of loose cigarettes.

In conclusion, tobacco product use continues to be the number one preventable cause of death, and most users become addicted before age 18. Raising the MLA to age 21 complements other strategies including higher tobacco taxes, strong smoke-free laws that include all workplaces and public places, and well-funded, sustained, comprehensive tobacco prevention and cessation programs. As a public health policy, local and state governments are implementing ordinances that reduce the number of youth with access to tobacco products by raising the MLA to age 21. To achieve the full benefits of the policy, enhanced monitoring of retailer compliance and enforcement may be necessary. Despite the limitations of the research currently available (reviewed in this report), there is evidence that Tobacco 21 policies can be implemented effectively, can lead to a reduction of tobacco use among youth and have minimal impact on the revenues of establishments selling tobacco products.

# Introduction

For the purposes of this report, “tobacco products” is defined to include cigarettes, cigars, smokeless tobacco, shisha or hookah tobacco, and electronic vapor products (including e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs and hookah pens).<sup>1</sup>

Tobacco 21 is a tobacco control initiative which prohibits retailers from selling tobacco products to anyone under age 21.<sup>2</sup> Tobacco use is the leading cause of preventable disease and death in the United States; cigarette smoking causes about one in every five deaths in the U.S. per year.<sup>3</sup> Cigarette smoking is associated with heart disease, stroke, cancer, chronic lung diseases and many other disabling and fatal conditions.<sup>4</sup> An emerging trend is the use of e-cigarettes and vapor products among youth. Electronic cigarette use is strongly associated with the use of other tobacco products among youth and young adults, including combustible tobacco products.<sup>5</sup> The Tobacco 21 initiative aims to expand efforts by states and localities to delay or prevent tobacco initiation by raising the minimum age of legal access (MLA) for sale of tobacco products to persons age 21 and older, and reducing access of minors to tobacco products by interrupting the supply available from peers age 18–20.<sup>6</sup>

## ***Tobacco 21 Rationale***

The U.S. Surgeon General has referred to tobacco use as a “pediatric epidemic,” because most tobacco use starts in high school and nearly all adult smokers began smoking by age 18. Adolescents are particularly vulnerable to long-term neurological harm from nicotine use.<sup>7</sup> According to the U.S. Surgeon General, when a still-developing brain is exposed to nicotine, it is reshaped “in a way that introduces long-lasting vulnerability of addiction to nicotine and other substances of abuse.”<sup>8</sup> Consequently, adolescent tobacco use leads to heavier daily consumption, stronger nicotine addiction and more difficulty quitting tobacco use later in life.<sup>9</sup> However, if smoking initiation can be delayed beyond the adolescent years, it is far less likely to ever occur.<sup>10</sup> Of those who begin smoking as youth, 80 percent will smoke into adulthood because of the powerful effects of nicotine, and one-half of adult smokers will die prematurely from tobacco-related diseases.<sup>11</sup> An internal tobacco industry document from the 1980s summarized, “If a man has never smoked by age 18, the odds are three-to-one he never will. By age 21, the odds are twenty-to-one.”<sup>12</sup>

The Centers for Disease Control and Prevention (CDC) reported 3.9 million middle and high school students used some form of tobacco in 2016, and the National Survey on Drug Use and Health (NSDUH) stated almost 90 percent of adult smokers smoked their first cigarette before they turned age 18, and nearly 95 percent started before age 21.<sup>13</sup> The 2016 U.S. Surgeon General's report found that e-cigarettes were the most commonly used tobacco product among youth in 2014, surpassing conventional cigarettes.<sup>14</sup> A recent study by the National Academy of Sciences stated children using e-cigarettes are at an increased risk of using tobacco cigarettes in the future.<sup>15</sup> Another study found that 10th- and 12th-grade students who use e-cigarettes are eight and six times more likely, respectively, than their peers to smoke tobacco cigarettes.<sup>16</sup> In Kansas, 78 percent of adult smokers started smoking tobacco products by age 18, and 97 percent started by age 26.<sup>17</sup>

Adolescents often rely on social sources, including peers age 18–20, to get tobacco products.<sup>18</sup> The Monitoring the Future 2017 survey, an annual survey of eighth-, 10th- and 12th-graders sponsored by the National Institute on Drug Abuse, reported that nearly two-thirds (62.9 percent) of 10th grade students found cigarette access to be “fairly easy or very easy.”<sup>19</sup> There are more 18- and 19-year-olds in high school now than in previous years, and adolescents have daily contact with students who can legally purchase tobacco for them.<sup>20,21</sup> A 2015 study by the Institute of Medicine (IOM; now known as the National Academy of Medicine) stated that changing the MLA to age 19 may not change social sources substantially for these adolescents, but increasing the MLA to age 21 may provide greater distancing of social sources.<sup>22</sup>

## Descriptive Statistics of Youth Smoking Rates

### Key Points:

- In the last decade, smoking prevalence rates have declined significantly among Kansas high school students (from 51.0 percent in 2005 to 26.5 percent in 2017 for ever smoked a cigarette; from 21.0 percent in 2005 to 7.2 percent in 2017 for currently smoking cigarettes; and from 25.3 percent in 2005 to 10.6 percent in 2017 for currently smoking either cigarettes or cigars).
- However, in 2017, 10.6 percent of Kansas high school students reported currently using an electronic vapor product while 34.8 percent reported ever using an electronic vapor product. E-cigarette use (or vaping) nationally among high school students increased two and a half times (4.5 percent in 2013 compared to 11.3 percent in 2016).
- In 2017, the prevalence rates for tobacco product use for Kansas high school students were lower than national rates. In Kansas, 7.2 percent of high school students reported current use of cigarettes compared to 8.8 percent nationally, and 17.1 percent reported using one or more tobacco products (cigarettes, cigars, smokeless tobacco or an electronic vapor product) compared to 19.5 percent nationally.
- In Kansas, a statewide Tobacco 21 law would affect directly or indirectly nearly 250,000 Kansans age 15–20. Adults age 18–20 would be directly affected, and adolescents age 15–17 may no longer have access to a supply of tobacco products from their peers age 18–20.

This section of the report provides descriptive statistics for youth age 15–20 to understand the initiation and prevalence of the use of tobacco products by:

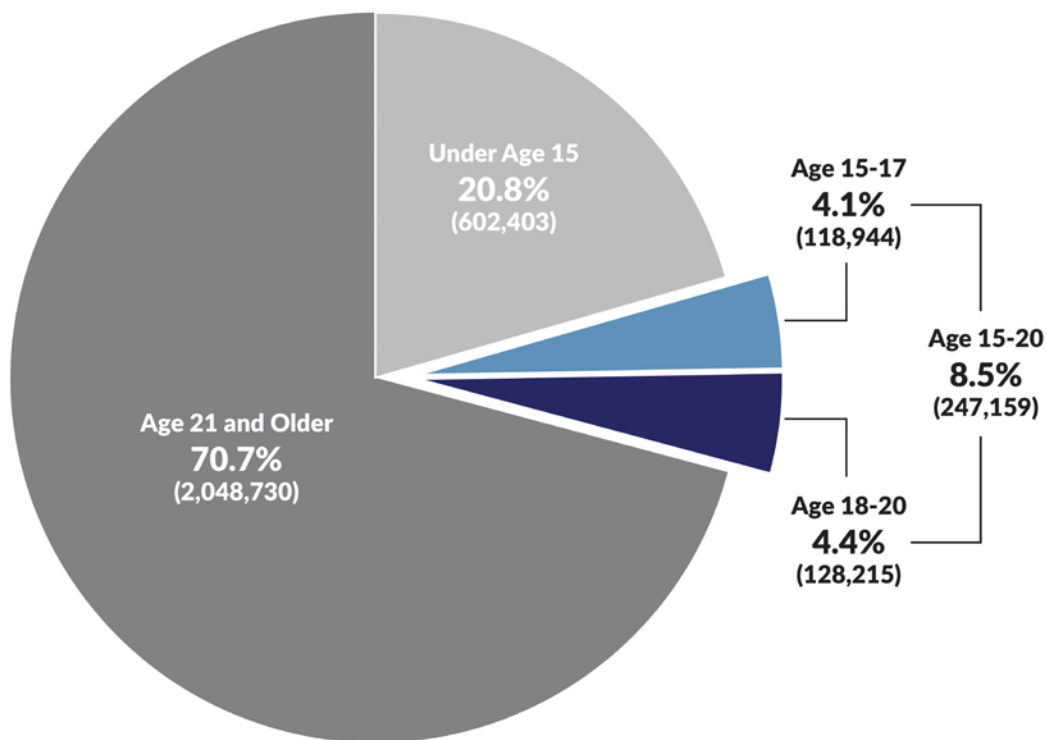
- Determining the population that could be potentially directly and indirectly impacted by Tobacco 21 policies;
- Comparing the current use of tobacco products in Kansas and the United States; and
- Examining trends in smoking-related activities.

### ***Affected Kansas Population***

To understand the population that could potentially be impacted by increasing the MLA to age 21 in Kansas, KHI examined Kansas data from the 2016 American Community Survey Five-Year Estimates (2012–2016).

In 2016, the Kansas population consisted of 118,944 (4.1 percent of the total population) youth age 15–17 and 128,215 (4.4 percent) young adults age 18–20, totaling 247,159 people age 15–20. These youth and young adults (8.5 percent of Kansans) could potentially be affected by increasing the MLA to age 21 statewide (*Figure 1*). Refer to *Appendix B* (page B-1) for county age distributions.

**Figure 1. Percent of People Potentially Affected by Statewide Tobacco 21 Policy in Kansas by Age, 2016**



Note: Total Kansas population = 2,898,292.

Source: KHI analysis of data from the U.S. Census Bureau's 2016 American Community Survey Five-Year (2012–2016) Estimates.

### **Current Smoking Rates**

According to the 2016 CDC's National Youth Tobacco Survey (NYTS), 20.2 percent of surveyed high school students reported current tobacco product use. Of those users, almost half (47.2 percent) used two or more tobacco products (which could include e-cigarettes).<sup>23</sup>

When examining the recent 2017 Youth Risk Behavior Survey (YRBS), the prevalence rates for tobacco product use for Kansas high school students were lower than national rates (*Figure 2*).<sup>24</sup>

**Figure 2. Prevalence Rates for Tobacco Product Use Among High School Students in Kansas and the U.S., 2017**

	Kansas	U.S.
<b>Cigarettes</b>		
Smoked cigarettes in the past 30 days	7.2 percent	8.8 percent
Ever tried a cigarette	26.5 percent	28.9 percent
Currently smoking cigarettes daily	1.1 percent	2.0 percent
<b>Electronic Vapor Products</b>		
Used an electronic vapor product in the past 30 days	10.6 percent	12.2 percent
Ever used an electronic vapor product	34.8 percent	42.2 percent
Currently using electronic vapor products daily	1.4 percent	2.4 percent
<b>Overall</b>		
Currently using cigarettes, cigars, smokeless tobacco or an electronic vapor product	17.1 percent	19.5 percent

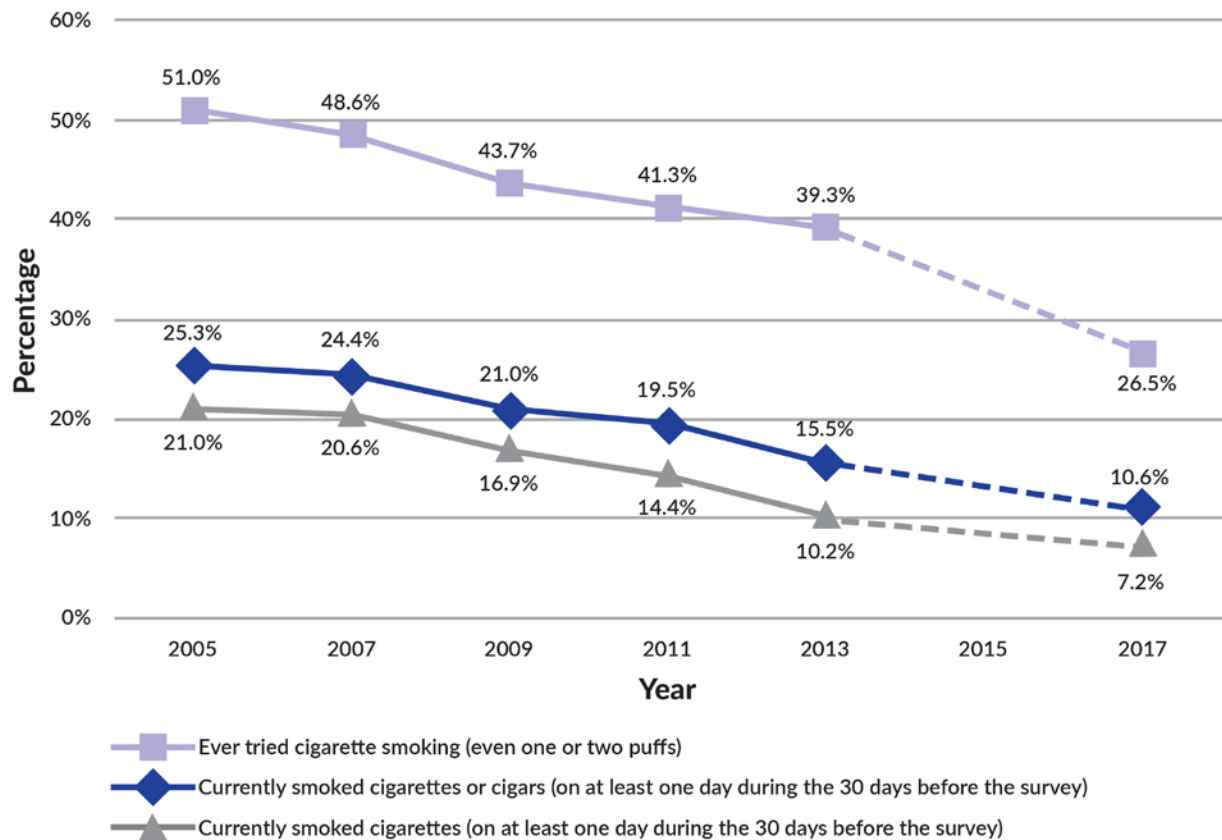
Source: KHI analysis of data from the Kansas and United States Youth Risk Behavior Surveys, 2017.

## **Smoking-Related Trends**

Based on data available from the YRBS, progressively fewer Kansas high school youth have reported engaging in smoking-related activities from 2005 to 2017 (Figure 3, page 6):<sup>25</sup>

- The number of high school youth reporting that they had ever tried smoking a cigarette decreased from a little over half (51.0 percent) in 2005 down to a little over a quarter (26.5 percent) in 2017;
- The number reporting currently smoking cigarettes decreased from 21.0 percent in 2005 to 7.2 percent in 2017; and
- The number reporting currently smoking either cigarettes or cigars decreased from about a quarter (25.3 percent) in 2005 to 10.6 percent in 2017.

Figure 3. Trends for Smoking Related Activities in Kansas High School Youth, 2005–2017



Note: The earliest available data were from the year 2005 and the latest available data were from the year 2017; however, data were unavailable for the year 2015.

Source: KHI analysis of the Centers for Disease Control and Prevention Youth Risk Behavior Survey (2005–2017).

KHI further analyzed national data from the CDC’s National Youth Tobacco Survey (NYTS) to identify patterns in the nation in e-cigarette use between 2013 and 2016. The 2013 NYTS found that 4.5 percent of high school students reported using e-cigarettes at least one time in the last 30 days.<sup>26</sup> By 2016, this rate had increased to 11.3 percent.<sup>27</sup> Note that trend analysis is not yet available for electronic vapor products in Kansas because state-specific data were unavailable prior to 2017.



## Status of Tobacco 21 Policies

### Key Points:

- In 2005, Needham, Massachusetts, was the first town in the U.S. to enact a law raising the minimum age of legal access (MLA) to tobacco products to age 21.
- As of 2017, five states – Hawaii, California, New Jersey, Oregon and Maine – have raised the MLA to age 21. The District of Columbia, Guam and 297 localities in an additional 15 states have raised their MLA to age 21, including New York City, Chicago, San Antonio, Boston, Cleveland, St. Louis and both Kansas City, Kansas, and Kansas City, Missouri.
- In Kansas, 21 localities, including Kansas City, Iola, Garden City, Shawnee County (unincorporated), Topeka and recently Parsons and Holcomb have raised their MLA to age 21. However, a Shawnee County District Court judge entered a permanent injunction prohibiting the enforcement of the Tobacco 21 ordinance in Topeka on March 22, 2018. The ruling appears to conflict with the opinion issued by Attorney General Derek Schmidt on December 28, 2017.

### ***Tobacco Laws***

The MLA was set to age 18 more than two decades ago when Congress passed a law in 1992 known as the Synar Amendment. It conditioned state eligibility for substance abuse prevention and treatment block grants on states setting their MLA for tobacco products to no lower than age 18.<sup>28</sup> The Family Smoking Prevention and Tobacco Control Act of 2009 (Tobacco Control Act) directed the Food and Drug Administration (FDA) to issue regulations to restrict cigarette and smokeless tobacco retail sales to youth and to restrict tobacco product advertising and marketing to youth; however, the act prohibits the FDA from raising the MLA to over age 18.<sup>29</sup> The Tobacco Control Act does not preclude states and localities from raising the MLA.<sup>30</sup> As of September 2017, 22 states had laws that pre-empt or prevent local communities from passing local ordinances that are more stringent or differ from a state's tobacco control policies related to access. Seventeen states have laws that preempt local ordinances related to restrictions on tobacco product vending machines. See *Appendix E* (page E-1) for a list of states.<sup>31</sup>

Forty-five states and the District of Columbia prohibit the purchase, use and/or possession (PUP) of tobacco products by underage persons (Maryland, Massachusetts, Nevada, New Jersey and New York do not have PUP laws).<sup>32</sup> Penalties for youth who violate a PUP law typically include a fine but also may include other penalties, including community service, attending mandatory smoking education or cessation programs, or the suspension of a driver's license or permit. Some

states passed PUP laws with the intention of reducing youth smoking by making kids more personally responsible for buying and using tobacco products. Penalizing children, however, has not proven to be an effective strategy for reducing youth smoking, and some experts argue that PUP laws could detract from more effective enforcement measures and tobacco control efforts.<sup>33,34</sup>

### *Kansas Tobacco State Laws*

In Kansas, the MLA to purchase or possess tobacco products is age 18.<sup>35</sup> The state requires retailers to pay \$25 every two years for a license to sell tobacco products, and self-service displays for tobacco products are only permissible in designated tobacco specialty stores, commercial buildings or industrial plants for the sole use of adult employees, or in a facility where the retailer ensures that no person under age 18 is permitted.<sup>36</sup> Kansas has enacted several tobacco control laws in recent years, including:<sup>37,38</sup>

- Prohibiting smoking in most public indoor spaces, including worksites, restaurants and bars as a result of the 2010 Kansas Indoor Clean Air Act; and
- Raising the state excise tax on cigarettes to \$1.29 per pack in 2015.

As of August 15, 2018, Kansas state law contains no pre-emption language regarding restrictions of access to tobacco adopted at the local level. Kansas localities have broad constitutional powers granted under Article 12, Section 5, of the Kansas Constitution for self-government. These powers are referred to as "Home Rule" powers and were granted to Kansas cities in 1961, empowering them to pass ordinances regarding their local affairs. Kansas Attorney General Derek Schmidt issued an opinion on December 28, 2017, stating that Tobacco 21 local ordinances are a legal exercise of home ruling.<sup>39</sup>

Under K.S.A 79-3321 and 79-3322, Kansas specifies penalties associated with minors (under age 18) for purchase, use and/or possession of tobacco products to a \$25 fine, and the minor may be required to appear in court with a parent and/or legal guardian.

## ***Tobacco 21 Policies***

Given the results of research and the number of potentially affected youth age 15–20, there has been a growing, nationwide movement to adopt Tobacco 21 policies, especially in the last five years. In 2005, Needham, Massachusetts, was the first locality to raise their MLA for tobacco to age 21. As of June 2018, approximately 25 percent of the U.S. population lives in an area with an MLA at age 21, either under state law or local ordinance.<sup>40</sup> Milestones of that process include:

- In 2013, eight localities, including New York City, had adopted Tobacco 21 policies.<sup>41</sup>
- In September 2015, federal legislation for Tobacco 21 was first introduced (Tobacco to 21 Act, H.R.3656 and S.2100). The House Committee on Energy and Commerce referred H.R.3656 to the Subcommittee on Health (which took no further action), and the Senate Committee on Commerce, Science, and Transportation took no further action on S.2100.<sup>42</sup>
- By March 2016, at least 125 localities and the state of Hawaii had raised their MLA to age 21.<sup>43</sup>
- By September 2017, five states had enacted Tobacco 21 laws, including Hawaii, California, New Jersey, Oregon and Maine.<sup>44</sup> (Note that New Jersey had set the MLA to age 19 in 2006 and raised it to age 21 in 2017.)<sup>45</sup> One common element in the state statutes is that, with the exclusion of Hawaii, e-cigarettes are included, but minor in possession penalties are not. Penalties to retailers who sell to minors under age 21 vary by state in their specific details. Refer to *Appendix C* (page C-1) to see existing state statutes.
- In November 2017, federal legislation for Tobacco 21 was introduced into Congress again (Tobacco to 21 Act, H.R.4273 and S.2100). As of March 2018, no committees have acted on the bills.<sup>46</sup>
- Three states set their MLA to age 19 before the Tobacco 21 initiative including, Alaska (1988), Alabama (1997) and Utah (1973).<sup>47</sup>

As of June 2018, the District of Columbia, Guam and 297 localities in 15 states have enacted ordinances to raise the MLA to age 21, including New York City, Chicago, San Antonio, Boston, Cleveland, St. Louis and both Kansas City, Kansas, and Kansas City, Missouri.<sup>48</sup>

Statewide initiatives have also been proposed in Connecticut, Illinois, Iowa, Kentucky, Massachusetts, Michigan, New York, North Carolina, Oklahoma, Pennsylvania, Tennessee, Texas, Utah, Vermont, Washington and West Virginia.<sup>49</sup>

### *Kansas Tobacco 21 Policies*

As of August 15, 2018, there has been no statewide legislation introduced in Kansas. Similar to Kansas cities and counties enacting their own smoke-free ordinances prior to the implementation of the statewide 2010 Indoor Clean Air Act, Tobacco 21 advocacy has been bottom-up, prioritizing policy change at the local level. The Tobacco 21 initiative in Kansas began in October 2015 with a campaign spearheaded by the Greater Kansas City Chamber of Commerce, which serves both Kansas City, Kansas, and Kansas City, Missouri, and over 100 civic and health organizations in the metropolitan area.<sup>50</sup> Since this effort began, 21 localities have enacted Tobacco 21 ordinances including most of the Kansas side of the greater Kansas City metropolitan area, Iola, Garden City, Shawnee County (unincorporated), Topeka, and recently, Parsons and Holcomb.

Refer to *Appendix D*, page D-1, for a full list of localities in Kansas that have adopted ordinances to raise the MLA to age 21. Below are select localities that have passed or are having active discussions on the Tobacco 21 initiative:

**Unified Government of Wyandotte County and Kansas City, Kansas.** This was the first locality to pass the Tobacco 21 ordinance, with a 6-1 vote, effective November 26, 2015.<sup>51</sup> The ordinance prohibits the sale of tobacco products, e-cigarettes, other vapor products and alternative nicotine products to those under age 21.<sup>52</sup>

**Roeland Park.** The ordinance passed, with a 5-3 vote, prohibiting the sale and purchase of cigarettes, electronic cigarettes, liquid nicotine or tobacco products to persons under age 21 with the exception of current and former U.S. military.<sup>53</sup> Council members who opposed the ordinance asked for an exemption for young adults who live on their own, have their own home, and are married; however, this exemption was not considered.<sup>54</sup> The ordinance went into effect on November 21, 2016.<sup>55</sup>

**Merriam.** The ordinance did not advance during a city council meeting held on February 22, 2016, because of lack of council support – members thought it was a state issue and were concerned with lawsuits based on mismatch of local and state laws.<sup>56</sup> However, it gained

momentum later in the year and the ordinance passed unanimously at a meeting held on December 12, 2016, prohibiting the sale and purchase of cigarettes, electronic cigarettes, liquid nicotine or tobacco products to persons under age 21.<sup>57</sup> The ordinance went into effect on January 1, 2017.<sup>58</sup>

**Garden City.** The Tobacco 21 momentum grew from a group of Garden City High School students and was supported by the LiveWell Finney County committee and Garden City Chamber of Commerce, with the exception of stores that sell tobacco products.<sup>59</sup> The ordinance passed by a 4-1 vote, effective July 1, 2017.<sup>60</sup> Garden City's ordinance is different from the other Kansas ordinances because it also raises the MLA to possess tobacco products to age 21.<sup>61</sup> There has been some opposition from retailers related to the age of their employees, because the ordinance raised the possession law to age 21.<sup>62</sup>

**Topeka.** Topeka City Councilwoman Elaine Schwartz spearheaded the effort in Topeka, and the ordinance was approved on December 5, 2017, with an 8-2 vote.<sup>63</sup> However, the City of Topeka cannot enforce the new Tobacco 21 ordinance because a Shawnee County District Court judge entered a permanent injunction prohibiting the enforcement of the Tobacco 21 ordinance in the City of Topeka on March 22, 2018. The judge ruled that the ordinance interferes with the licenses granted under the Kansas Cigarette and Tobacco Products Act and unduly and unreasonably restricts commercial enterprises in violation of the Kansas Constitution's Home Rule Amendment.<sup>64,65</sup> The ruling appears to conflict with the opinion issued by Attorney General Derek Schmidt on December 28, 2017, stating that Tobacco 21 local ordinances are a legal exercise of home rule.<sup>66</sup> The City of Topeka filed a notice of appeal with the District Court on April 11, 2018,<sup>67</sup> and subsequently filed a motion to transfer the case to the state Supreme Court on April 30, 2018.<sup>68</sup> As of August 15, 2018, the injunction has continued and the court has permitted amicus curiae briefs to be filed by September 13, 2018, for select applicants – Kansas League of Municipalities, Petroleum Marketers and Convenience Store Association (PMCA) of Kansas, Kansas Attorney General Derek Schmidt, Greater Kansas City Corporate Challenge (KCCC) and Campaign for Tobacco-Free Kids.<sup>69</sup>

**Parsons.** On a 3-2 vote, commissioners approved an ordinance banning the sale to and purchase of all tobacco products and vaping supplies to people under age 21. It still will be legal for people age 18 and over to possess tobacco. There are two exemptions in the ordinance: (1) active duty military with a U.S. military ID may continue to purchase products at age 18 or older; and (2)

persons born on or before April 2, 2000, may still purchase tobacco and vapor products. The ordinance will take effect May 5, 2018.<sup>70</sup> Despite the injunction in the City of Topeka, a City of Parson's commissioner wants the policy to continue forward.<sup>71</sup>

**Holcomb.** Holcomb City Council approved an ordinance that went into effect June 20, 2018, making it illegal to sell cigarettes, e-cigarettes or tobacco products to anyone under age 21 or those who purchase for anyone under age 21. Similar to Garden City, it is also illegal for persons under age 21 to possess these products. Persons under age 21 in possession may incur a \$25 fine and juveniles may need to appear in court with a legal guardian. Persons selling tobacco or purchasing tobacco for those under the age 21 face a fine of at least \$200.<sup>72</sup>

**Lawrence.** The Lawrence-Douglas County Health Department launched a Tobacco 21 Task Force in November 2017.<sup>73</sup> Organizations that have signed on to Lawrence's Tobacco 21 Task Force include Lawrence Public Schools, the Lawrence-Douglas County Housing Authority, the University of Kansas and Lawrence Memorial Hospital. The LiveWell Lawrence Tobacco-Free Living Work Group also is asking businesses, organizations and individuals to endorse the Tobacco 21 initiative in Douglas County. More than 40 nonprofits, medical professional associations, children's programs and local businesses also have publicly endorsed the Lawrence Tobacco 21 initiative.<sup>74</sup> During the public comment portion of the City Commission's meeting on March 20, 2018, three high school students testified in favor of a Tobacco 21 policy. While the Shawnee County District Court opinion is not binding on the City of Lawrence, a commissioner stated that a similar legal challenge could be plausible and directed the City Attorney's Office to continue to monitor this legal issue.<sup>75</sup> The Lawrence City Commission will discuss adoption of the Tobacco 21 policy at their next meeting on October 9, 2018.

**Shawnee.** The City of Shawnee is concerned by the increasing number of vape stores, and considered looking at Overland Park's model and changing the age of tobacco sales.<sup>76</sup> Meanwhile, the city passed two ordinances – one restricts the sale of drug paraphernalia in vape shops, and the other limits the location of vape shops to be the solo business in a free-standing building in areas zoned for tobacco sales.<sup>77</sup> The Shawnee City Council heard a presentation on Tobacco 21 on May 8, 2018, but no vote was taken as it was an informational presentation only.<sup>78</sup>

## *Localities That Did Not Support the Tobacco 21 Initiative or Considered Alternatives*

KHI's analysis of city council and county commission minutes found that some localities without a current Tobacco 21 ordinance had considered the Tobacco 21 ordinance, but failed; while others considered alternative policies to target vaping and electronic cigarettes only. Opponents of the Tobacco 21 ordinance were concerned with enforcement, age of majority, violation of personal rights and the lack of evidence supporting a positive impact on smoking prevalence rates. These localities include:

**Gardner.** The Tobacco 21 ordinance failed, with a 0-5 vote, on March 21, 2016.<sup>79</sup>

**Fairway.** The motion to approve the Tobacco 21 initiative was denied on a vote of 2-6 on July 11, 2016.<sup>80</sup>

**Mission.** The city has not discussed the Tobacco 21 initiative; however, similar to other localities in the greater Kansas City metropolitan area, the city amended their smoking restrictions to include e-cigarettes on June 15, 2016.<sup>81</sup>

**Sedgwick County.** There has been no consideration of Tobacco 21.<sup>82</sup> However, by a vote of 3-2, the Sedgwick County commissioners on June 12, 2018, overturned a previous policy passed in 2016 that allowed unflavored e-cigarettes, or vaping, in Sedgwick County buildings, including courtrooms, the county jail, tax offices and public health clinics.<sup>83</sup>

## Review of Literature

A systematic literature review was completed to examine both the reduction in youth smoking and the impact on retail sales in places that raised the MLA for sale of tobacco products to age 21. Specifically, the research questions addressed by the review were:

1. Is there a reduction in youth smoking after raising the minimum age of legal access to tobacco products to age 21?
2. Is there an impact on retail sales after raising the minimum age of legal access to tobacco products to age 21?

Refer to *Appendix A*, page A-1, for the methodology.

### ***Impact on Youth Smoking Rates***

#### **Key Points:**

- In Needham, Massachusetts, smoking prevalence rates among high school students decreased by 48.1 percent (from 12.9 percent in 2006 to 6.7 percent in 2010) in the four years following implementation of Tobacco 21 policies, three times as much as rates in surrounding towns.
- In New York City, the rate of current cigarette use among high school students had a non-significant decrease following implementation of Tobacco 21 (from 3.8 percent in 2014 to 3.1 percent in 2016); however, there was an increase in the rate of e-cigarette use among high school students (from 6.9 percent in 2012 to 14.9 percent in 2016).
- A recent quasi-experimental study conducted in Kansas found a significant decrease in 30-day cigarette use and 30-day smokeless tobacco use among high school students between 2014–2017; however, there was no significant impact from the Tobacco 21 policy when comparing schools in and outside of Tobacco 21 areas.
- Models in a 2015 report by the Institute of Medicine suggest that smoking prevalence overall will drop significantly between 2015 and 2100 due to previously instituted tobacco control policies even with the MLA at the status quo. However, they project that smoking prevalence rate among adults age 18 and older would decrease from 15.2 percent in 2014 to 9.7 percent by 2040 if the MLA were raised to age 21.
- A model developed by researchers at University of California-Irvine showed that smoking prevalence rate for youth age 15–17 would decrease from 22 percent in 2003 to under 9 percent by 2010 in seven years if the MLA was increased to age 21 across the U.S.



The review of existing literature revealed limited evidence related to the impact on youth smoking rates of raising the MLA for tobacco products to age 21, and most studies focused on cigarette smoking only.

The first study published is from Needham, Massachusetts, which in 2005 was the first city to raise the MLA to age 21. Researchers analyzed the impact on cigarette smoking rates in Needham based on results from the Metro West Health Foundations' Adolescent Health survey data, which is a biennial census survey of high school youth in communities west of Boston – over 16,000 students participated at four points in time from 2006 to 2012. The main findings are presented below.<sup>84</sup>

- In the four years following Tobacco 21 implementation, the 30-day cigarette smoking rate among high school students decreased by 48.1 percent (from 12.9 percent in 2006 to 6.7 percent in 2010). The decrease in the smoking prevalence rate was significantly greater in Needham than the 30-day cigarette smoking rate in the 16 comparison communities combined (from 14.8 percent in 2006 to 12.0 percent in 2010). However, the same trend did not continue from 2010 to 2012 and the researchers indicated that raising the MLA may contribute to a greater decline in smoking in the years immediately following its adoption – as the smoking rate decreased in Needham, floor effects (approaching lower limit) might have slowed the rate of decline in the period from 2010 to 2012.
- In the four years following Tobacco 21 implementation, the rate of cigarette purchases among current smokers also declined significantly more in Needham (from 18.4 percent in 2006 to 12.7 percent in 2010 ) than in the 16 comparison communities combined (from 19.4 percent in 2006 to 20.4 percent in 2010). This trend also did not continue from 2010 to 2012. The researchers suggested that by successfully reducing commercial availability of cigarettes to Needham youth, there was a decrease in underage purchases, as well as a potential disruption of the social availability of cigarettes to other youth.
- The researchers also suggested that youth did not travel to nearby localities – where the MLA was age 18 – to purchase tobacco products.

Recently, a study was conducted utilizing data from the New York YTS and the YRBS to examine the impact of implementing the Tobacco 21 policy in New York City, which went into effect in 2014, in comparison to the state of New York and four Florida cities. When understanding the

findings below, please keep in mind that rates of tobacco product use were lower in New York City than in the rest of the state and the four cities in Florida before the introduction of the Tobacco 21 policy.<sup>85</sup>

- In New York City, the rate of current cigarette, smokeless tobacco or cigar use decreased following implementation of Tobacco 21 (from 11.6 percent in 2012 to 10.6 percent in 2016). However, the decline was greater in the state of New York where only certain localities had adopted Tobacco 21 (from 16.5 percent in 2012 to 7.1 percent in 2016). Similar results were found in New York City compared to the four cities in Florida.
- E-cigarette use rate in New York City increased after Tobacco 21 implementation (from 6.9 percent in 2012 to 14.9 percent in 2016), but the researchers noted that they could not assess the impact of the Tobacco 21 policy.
- Purchase rate of loose cigarettes remained unchanged in New York City after Tobacco 21 implementation (from 54.7 percent in 2016 to 54.5 percent in 2012).
- Researchers noted that floor effects (similar to Needham, MA) may have caused the modest decline in the smoking prevalence rates in New York City. The researchers also noted that the results suggested uneven policy implementation, enforcement or compliance.

A recent poster from research based in Kansas utilized a quasi-experimental design to compare 10 schools impacted by Tobacco 21 ordinances to 10 schools that were not impacted by the Tobacco 21 policy from 2014–2017. The findings are discussed below.<sup>86</sup>

- From 2014–2017, there was a significant decrease in the prevalence rates for 30-day cigarette use in both Tobacco 21 schools (from 5.0 percent in 2014 to 3.1 percent in 2017) and non-Tobacco 21 schools (from 4.4 percent in 2014 to 3.2 percent in 2017).
- From 2014–2017, 30-day smokeless tobacco use decreased significantly in Tobacco 21 schools by 47.2 percent (from 5.3 percent in 2014 to 2.8 percent in 2017) and in non-Tobacco 21 schools by 27.0 percent (from 3.7 percent in 2014 to 2.7 percent in 2017).
- The Tobacco 21 policy did not have a significant impact on either rates of 30-day cigarette smoking or 30-day smokeless tobacco use in this study. Researchers noted that

this may be due to the limited availability of data and a short study period – more complete data spanning over longer periods may provide different results about trends in usage.

Other studies found in the literature review are based on models and simulations to predict the smoking prevalence rates when raising the MLA to age 21 across the United States. Researchers in the following studies had to make several assumptions in their models to project smoking prevalence rates over a 25- to 85-year time span.

In 2013, the IOM convened a committee to study the public health implications of raising the MLA of tobacco products. The study included extensive literature review on tobacco initiation and statistical modeling and other methods, as appropriate, to predict the likely public health outcomes of raising the MLA to age 21. The main findings, published in March 2015, are presented below.<sup>87</sup>

- Adolescent brains have a heightened sensitivity to the rewarding effects of nicotine, and this sensitivity diminishes with age. Approximately 54 percent of smokers are smoking daily before age 18, 85 percent are smoking daily before age 21 and 94 percent are smoking daily before age 25. The IOM concluded that if tobacco is not regularly used by age 25, then there is a low likelihood of adolescents becoming tobacco users later in life.
- There is no evidence indicating that bans on noncommercial distribution of tobacco by friends, proxy purchasers and other “social sources” are enforced. The IOM study also stated that the impact on the initiation of tobacco use of raising the MLA to age 21 will likely be substantially higher than raising it to age 19, but the added effect of raising the minimum age beyond age 21 to age 25 will likely be considerably smaller.
- The model projected the smoking prevalence rate overall will drop significantly even with maintaining MLA at age 18 and previously instituted tobacco control policies (referred to as status quo). However, if MLA were raised to age 21, the IOM model projected the smoking prevalence rate among adults age 18 and older would decrease by 6.4 percent in 2040 (from 10.4 percent in status quo to 9.7 percent in MLA age 21) and by 12.0 percent in 2100 (from 8.7 percent in status quo to 7.7 percent in MLA age 21).

- Increasing the MLA of tobacco products will likely prevent or delay initiation of use by adolescents and young adults. Although changes in the MLA of tobacco products will directly pertain to individuals age 18 or older, the largest proportionate reduction (20.8–30.0 percent) in the initiation of tobacco use will likely occur among teens age 15–17.

Similar to the models developed in the IOM report, researchers at the University of California Irvine published a few studies using publicly available secondary data to estimate the impact of raising the MLA to age 21 on smoking prevalence, net costs (in terms of compliance enforcement, ID checking, and medical care) and health benefits (in terms of life years and Quality Adjusted Life Years [QALYs]).

- A study conducted in 2007 used a 75-year dynamic simulation model based on publicly available federal data. If MLA were raised to age 21, the model projected that in seven years the smoking prevalence for youth age 15–17 would drop from 22 percent in 2003 to under 9 percent by 2010. Also, adult smoking prevalence would decrease to 13.6 percent (comparable to the effect of a 40 percent tax-induced price increase), producing a cumulative gain of 109 million QALYs (comparable to a 20 percent tax-induced price increase) over the next 75 years. The study also suggested that raising the MLA should be considered over moderate cigarette excise tax increases to reduce the health burden of smoking.<sup>88</sup>
- An earlier study in 2005 estimated a drop in smoking prevalence from 20.0 percent to 6.6 percent for youth age 14–17, from 26.9 percent to 12.2 percent for adults age 18–20, and from 21.8 to 15.5 percent for those age 21 and older. The policy would produce a net cumulative savings to society of \$212 billion (driven by reduced medical costs) over the next 50 years and gain 13 million QALYs compared to leaving the MLA at age 18.<sup>89</sup>
- A similar study conducted in 2005 based on the population of California found that the policy would generate no net costs and would, in fact, save the state and its residents a total of \$24 billion over the next 50 years with a gain of 1.47 million QALYs compared to leaving the MLA at age 18.<sup>90</sup>

## ***Impact on Retailers***

### **Key Points:**

- A study estimated the economic consequences of implementation of Tobacco 21 policies to be a reduction of approximately 2.2 percent of total tobacco sales.
- Preliminary evidence from Wyandotte County shows that there were no detectable effects on revenues of gasoline stations with convenience stores, where many tobacco sales take place.
- A study in California found that there was a reduction in sales to minors when comparing pre- and post-Tobacco 21 implementation. Half of retailers reported complaints about the age limits from those affected and one-quarter indicated witnessing “shoulder tap” buys on a monthly basis after the Tobacco 21 policy went into effect.
- A study in New York City concluded that there was a reduction in legal purchase age identification verification after adoption of Tobacco 21 policies, which may be improved with enforcement regulation.

## ***Retail Sales***

Teenagers obtain cigarettes from two primary sources: commercial sources (direct retail purchase) and social sources (buying or being given cigarettes from friends, acquaintances and relatives).<sup>91</sup> Over the years, tobacco manufacturers, e-cigarette companies and retailers’ associations have expressed concern about the negative impact of Tobacco 21 policies on sales revenue, which could target small businesses and be viewed as a violation of individual rights.<sup>92</sup>

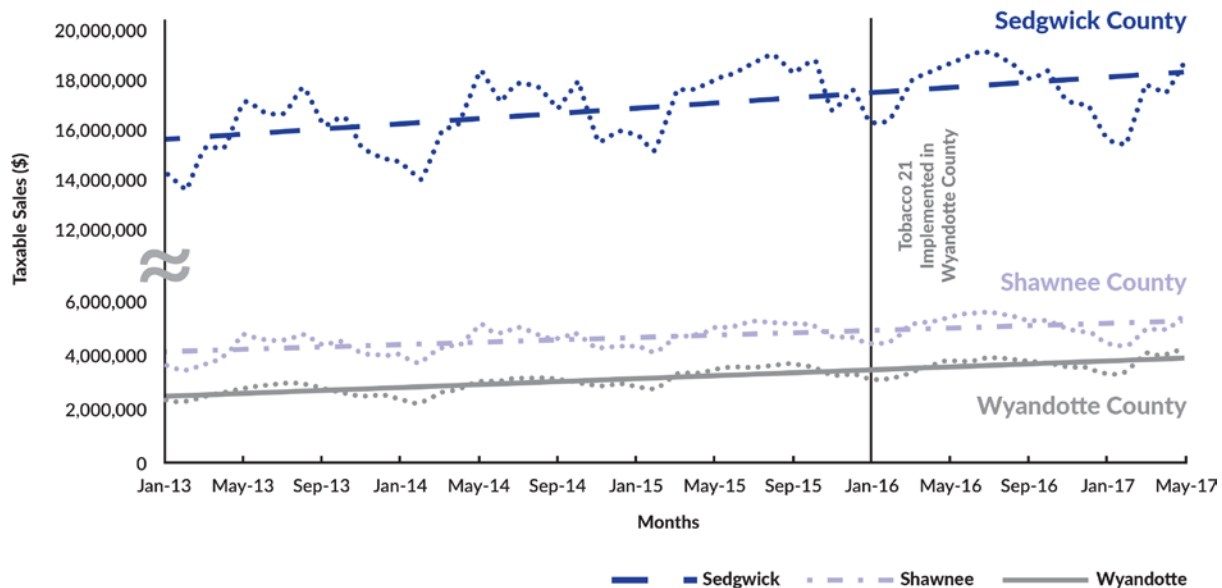
A study of retail sales using data on self-reported cigarette consumption from the 2011 National Health Interview Survey (NHIS) estimated youth age 18–20 consume 2.1 percent of the cigarette market. With perfect enforcement, total tobacco sales may drop as much as 2.2 percent annually. A limitation in this study is the assumption that all adults age 18–20 consuming cigarettes would stop smoking, and it does not account for other potential uptake patterns.<sup>93</sup>

A study found that the tobacco retailer licensing system can be important in enhancing enforcement, as a licensing fee provides a stable and reliable source of funding for enforcement.<sup>94</sup> In several jurisdictions including Boston, Massachusetts and Santa Clara County, California, license suspension or revocation is expressly available as a sanction for non-compliance.<sup>95</sup>

**Wyandotte County analysis.** To examine the association between the implementation of Tobacco 21 ordinances and retail sales, KHI compared the change in taxable sales in gasoline stations with convenience stores (where many tobacco sales take place and the best available data can be obtained) before and after the implementation of Tobacco 21 in Wyandotte County to the changes in taxable sales during the same time period for comparable retailers in two other Kansas counties (Shawnee and Sedgwick). These two comparison counties did not have Tobacco 21 laws during the study period (January 2013–May 2017) and were chosen because they had similar smoking rates and demographics to Wyandotte County.

This preliminary study suggested that taxable sales for gasoline stations with convenience stores in Wyandotte County continued to grow from 2013 to 2017 (\$2.36 million in January 2013 compared to \$4.40 million in May 2017), and the growth trend remained the same before and after the implementation of Tobacco 21 ( $p=0.40$ ; *Figure 4*, page 21). When comparing Wyandotte County to Shawnee and Sedgwick Counties, where Tobacco 21 ordinances were not implemented, there was no significant difference in the taxable sales trends for gasoline stations with convenience stores between counties across time ( $p=0.12$  and  $p=0.06$ , respectively), which suggests that the implementation of Tobacco 21 in Wyandotte County did not have a detectable effect on overall taxable sales in convenience stores located in gasoline stations. These findings should be viewed in the context of the methodology and limitations discussed in *Appendix A* (page A-1).

**Figure 4. Taxable Sales Trends in Sedgwick, Shawnee and Wyandotte Counties, January 2013–May 2017**



Note: Taxable sales are defined as the monthly sales tax revenue reported for gasoline stations with convenience stores, divided by the state sales tax rate. The y-axis is truncated between \$6,000,000 and \$12,000,000. Dotted lines in the background show actual taxable sales by month and straight lines show the trend of taxable sales over time (best fit).

Source: KHI analysis of monthly state sales tax revenue by county, Kansas Department of Revenue, September 2017.

## Enforcement

According to the 2013 YRBS, 10.8 percent of Kansas high school students under age 18 reported obtaining their own cigarettes by buying them in a store such as a convenience store, supermarket, discount store or gas station.<sup>96</sup> Retailer enforcement programs often consist of compliance checks in which “decoy” underage purchasers test compliance with age verification requirements as well as minimum age restrictions, under the supervision of an adult. The federal government oversees two comprehensive programs to enforce the MLA for tobacco products: the Synar program of the Substance Abuse and Mental Health Services Administration (SAMHSA), and the FDA’s tobacco retail compliance inspection contracts, which are implemented by states and localities. The most recent retailer compliance survey under the Synar Program found that the 2013 national retailer violation rate – retailers selling to minors under age 18 – was 9.6 percent, and few retailers were fined or suffered license suspension. In Kansas, the retailer violation rate was 3.1 percent in 2013.<sup>97</sup>

- **Needham, Massachusetts.** Researchers stated that enforcement may partially explain the apparent success of raising the minimum tobacco sales age in Needham – 57 compliance checks were conducted, with zero illegal sales to those under the age of 18 occurring.<sup>98,99</sup>
- **Wyandotte County.** An enforcement operation conducted in Wyandotte County in November 2017 to determine retailer compliance with Tobacco 21 laws found that 22 percent of the 143 sampled businesses sold tobacco products to minors under age 21. Further, 37 percent of the cashiers who sold the tobacco products to minors were under age 21.<sup>100</sup>
- **State of California.** A study of enforcement, using underage “decoys,” in California found that there was a decrease in the retailer violation rate from the pre-Tobacco 21 period to the post-Tobacco 21 period. However, vape shops and tobacco-only stores were more likely to sell e-cigarettes to minors under age 21 than were convenience stores that sell gasoline. In the same study, a poll of retailers post-Tobacco 21 implementation found that over half of retailers heard complaints from individuals under age 21 and roughly one quarter of retailers reported observing “shoulder tap” buys (where an underage individual asks an adult to buy for them), highlighting the important of continued enforcement.<sup>101</sup>
- **New York City.** To study the enforcement of Tobacco 21 laws, New York City conducted a study on retailer compliance before and after raising the MLA to age 21. The study concluded that there was a reduction in identification (ID) checking when purchasing tobacco products after the Tobacco 21 ordinance was enacted. Compliance with minimum price laws also declined, indicating that poor compliance was not solely a result of a lag in integrating the new policy into practice but rather an independent secular trend. In this sample, compliance across laws clustered: retailers complying with other tobacco regulations (such as minimum price and signage) were much more likely to comply with required identification checks. This study also found that there was no significant changes in the number of adolescents reporting buying cigarettes or having IDs checked.<sup>102</sup>



## Conclusion

Tobacco use continues to be the number one preventable cause of death, and most tobacco users become addicted before age 18. Adolescent brains have a heightened sensitivity to the rewarding effects of nicotine. Therefore it is particularly disconcerting that 54 percent of daily smokers are smoking daily before age 18, 85 percent are smoking daily before age 21 and 94 percent are smoking daily before age 25 – if someone is not a regular smoker by age 25, it is highly unlikely they will become one.<sup>103</sup> An emerging trend, as well as a driver for the Tobacco 21 initiative, is the use of electronic vapor products among youth. The 2016 U.S. Surgeon General’s report found that e-cigarettes were the most commonly used tobacco product among youth in 2014, surpassing conventional cigarettes. E-cigarette use is strongly associated with the use of other tobacco products – including combustible tobacco products – among youth and young adults. According to the latest data available for Kansas, a 2017 survey found that 34.8 percent of high school students have ever used an electronic vapor product (e.g., e-cigarettes, e-cigars, e-pipes), and 10.6 percent were current users.

Raising the MLA to age 21 complements other strategies to reduce tobacco use, including higher tobacco taxes, strong smoke-free laws that include all workplaces and public places, and well-funded, sustained, comprehensive tobacco prevention and cessation programs.<sup>104</sup> As a public health policy, local and state governments are implementing ordinances that reduce the number of youth with access to tobacco products by raising the MLA to age 21. Local ordinances and/or state laws adopted so far have included all tobacco products (specifying e-cigarettes), enforcement provisions against illegal sales, and varying PUP penalties, a positive factor to address nicotine addiction in an integrated fashion.

The models in a 2015 IOM report estimated that if Tobacco 21 policies were adopted throughout the U.S., results would likely be:<sup>105</sup>

- Prevention of 4.2 million years of life lost to smoking in kids alive today;
- Prevention of 16,000 cases of preterm birth and low-birthweight in the first five years of the policy;
- Reduction in youth smoking initiation by 25 percent; and
- Reduction in the overall smoking prevalence rate to 12 percent by 2040.

Despite the limitations of the research currently available (reviewed in this report), there is evidence that Tobacco 21 policies can be implemented effectively, can lead to a reduction of tobacco use among youth, and have minimal impact on the revenues of establishments selling tobacco products. Additional evaluation research (particularly in the areas of Tobacco 21 policies enforcement and impact on access to tobacco products and related costs) is currently underway in the Kansas City metro area and other localities. KHI will review the available evidence when additional data become available.

# Appendix A: Methods

## ***Environmental Scan Methodology***

The scan of literature included articles published in peer-reviewed journals and grey literature that included non-peer reviewed reports, white papers, press releases and media articles for the following research questions:

1. Is there a reduction in youth smoking after raising the MLA for sale of tobacco products to age 21?
2. Is there an impact on retail sales after raising the MLA for sale of tobacco products to age 21?
3. What efforts for Tobacco 21 adoption are underway in Kansas — whereby “efforts” is defined as any localities with enacted ordinances as well as any active consideration or interest by agencies or the community.

The systematic literature review was conducted by doctorate and master’s level staff at KHI for both peer-reviewed and grey literature. The protocol can be seen in *Figure A-1* (page A-2), the results can be found in *Figures A-2* and *A-3* (page A-3) and the list of search terms can be found in *Figure A-4* (page A-4). The systematic literature review produced a small number of articles relevant to the research questions: PubMed yielded 36 initial hits, of which two articles were retained after applying the criteria; Google Scholar yielded 1,092 initial hits, of which seven articles were retained after applying the criteria; however, after comparison with results in the PubMed search, five articles remained. Google was not used for the systematic portion because of the amount of potential non-relevant information that would be identified (e.g., blogs or media articles) that were not relevant to the emphasis of the search. Education Resources Information Center (ERIC) was initially included as a search database. However, the use of Tobacco 21 in the ERIC system elicited no hits. Since there were no findings related to the central interest of this analysis, KHI removed the database from the search. Publications from the August 2018 update can be found in *Figure A-5* (page A-5).

Figure A-1. Systematic Literature Review Protocol and Results

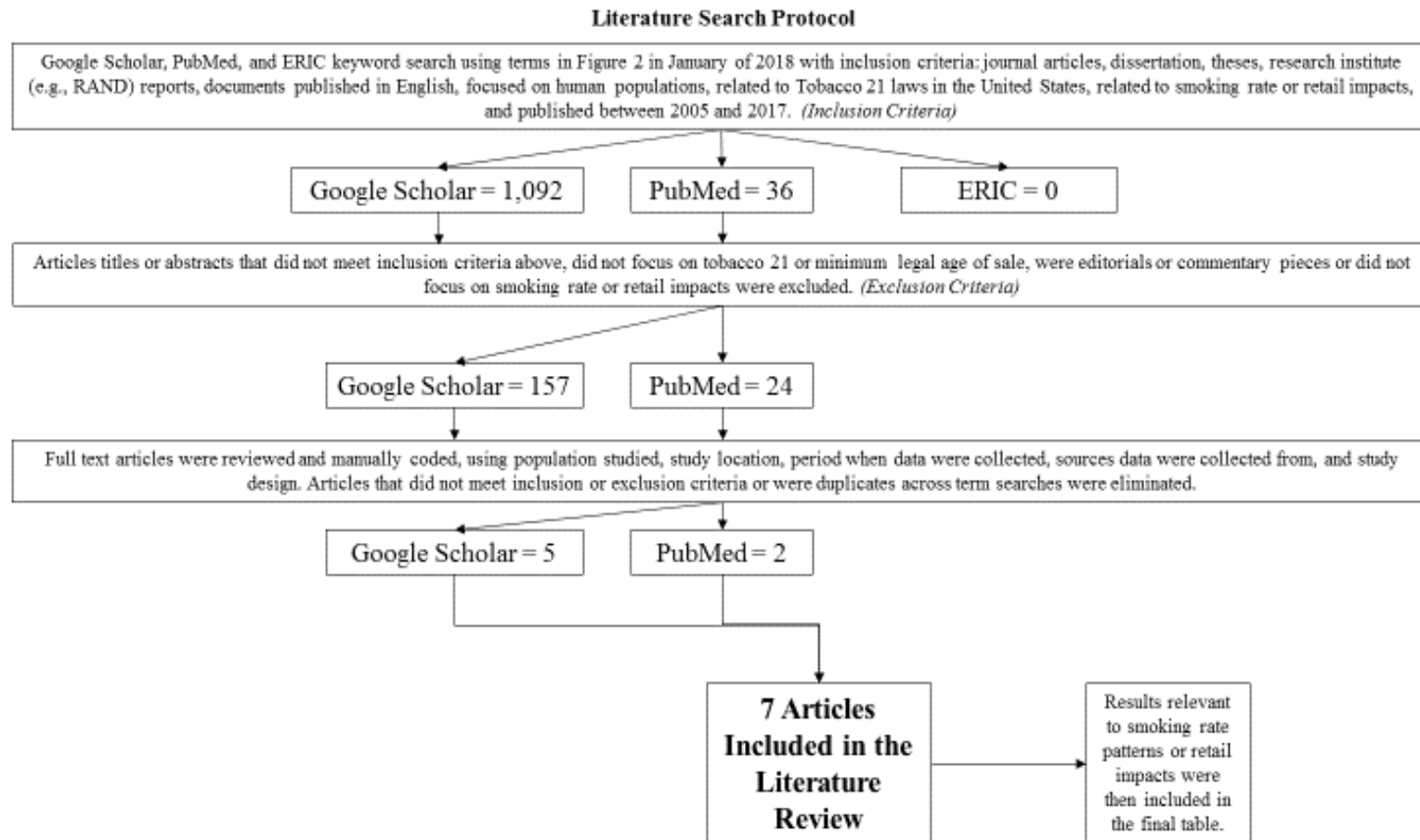


Figure A-2. Peer-Reviewed Literature

Marynak, K., Kenemer, B., King, B. A., Tynan, M. A., MacNeil, A., & Reimels, E. (2017). State Laws Regarding Indoor Public Use, Retail Sales, and Prices of Electronic Cigarettes – U.S. States, Guam, Puerto Rico, and U.S. Virgin Islands, September 30, 2017. <i>MMWR. Morbidity and Mortality Weekly Report</i> , 66(49), 1341–1346.
Schneider, S. K., Buka, S. L., Dash, K., Winickoff, J. P., & O'Donnell, L. (2015). Community reductions in youth smoking after raising the minimum tobacco sales age to 21. <i>Tobacco Control</i> , 25(3), 355–359.
Winickoff, J. P., Hartman, L., Chen, M. L., Gottlieb, M., Nabi-Burza, E., & DiFranza, J. R. (2014). Retail Impact of Raising Tobacco Sales Age to 21 Years. <i>American Journal of Public Health</i> , 104(11), e18–e21.
Silver, D., Macinko, J., Giorgio, M., Bae, J. Y., & Jimenez, G. (2016). Retailer compliance with tobacco control laws in New York City before and after raising the minimum legal purchase age to 21. <i>Tobacco Control</i> , 25(6), 624–627.
Ahmad, S. (2005). The Cost-Effectiveness of Raising the Legal Smoking Age in California. <i>Medical Decision Making</i> , 25(3), 330–340.
Ahmad, S., & Billimek, J. (2007). Limiting youth access to tobacco: Comparing the long-term health impacts of increasing cigarette excise taxes and raising the legal smoking age to 21 in the United States. <i>Health Policy</i> , 80(3), 378–391.
Ahmad, S. (2005). Closing the youth access gap: the projected health benefits and cost savings of a national policy to raise the legal smoking age to 21 in the United States. <i>Health Policy</i> , 75(1), 74–84.

Figure A-3. Select Grey Literature

Institute of Medicine. (2015). <i>Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products</i> . Washington, DC: The National Academies Press. <a href="https://doi.org/10.17226/18997">https://doi.org/10.17226/18997</a> .
U.S. Department of Health and Human Services. (2014). <i>The health consequences of smoking – 50 years of progress: a report of the Surgeon General</i> . Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
Johnston, L. D., O'Malley, P. M., Miech, R. A., Bachman, J. G., & Schulenberg, J. E. (2017). <i>Monitoring the Future national survey results on drug use, 1975–2016: Overview, key findings on adolescent drug use</i> . Ann Arbor, MI: Institute for Social Research, The University of Michigan. Retrieved at <a href="http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2016.pdf">http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2016.pdf</a> .
U.S. Department of Health and Human Services. (2012). <i>Preventing tobacco use among youth and young adults: a report of the Surgeon General</i> . Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
U.S. Department of Health and Human Services. (2016). <i>E-Cigarette Use Among Youth and Young Adults. A Report of the Surgeon General</i> . Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Figure A-4. Systematic Literature Review Search Terms

PubMed Terms	Google Scholar Terms
"tobacco 21"	"tobacco 21" AND "minimum age"
"tobacco 21" AND "minimum age"	"tobacco 21" AND "minimum age of legal access"
"tobacco 21" AND "minimum age of legal access"	"tobacco 21" AND "ordinance"
"tobacco 21" AND "ordinance"	"tobacco 21" AND "minimum sales age"
"tobacco 21" AND "minimum sales age"	"tobacco 21" AND "retail impact"
"tobacco 21" AND "retail impact"	"tobacco 21" AND "youth smoking"
"tobacco 21" AND "retail"	"tobacco 21" AND "tobacco cessation"
"tobacco 21" AND "youth smoking"	"tobacco 21" AND "cigarettes"
"tobacco 21" AND "tobacco cessation"	"tobacco 21" AND "sales age"
"tobacco 21" AND "cigarettes"	"tobacco 21" AND "smoking rate "
"tobacco 21" AND "sales age"	"smoking rate" AND "sales age"
"tobacco 21" AND "smoking rate "	"tobacco 21" AND "tobacco initiation" AND ("youth" OR "middle school")
"smoking rate" AND "sales age"	"sales age" AND "tobacco initiation" AND ("youth" OR "middle school")
"tobacco 21" AND "tobacco initiation" AND ("youth" OR "middle school")	"sales age" AND "smoking rate" AND ("youth" OR "middle school")
"sales age" AND "tobacco initiation" AND ("youth" OR "middle school")	"tobacco 21" AND "smoking rate" AND ("youth" OR "middle school")
"sales age" AND "smoking rate" AND ("youth" OR "middle school")	"smoking rate" AND "Needham"
"tobacco 21" AND "smoking rate" AND ("youth" OR "middle school")	"tobacco 21" AND "smoking uptake"
"smoking rate" AND "Needham"	"smoking rate" AND "Needham, MA"
"tobacco 21" AND "smoking uptake"	"tobacco 21" AND "retail sales"
"smoking rate" AND "Needham, MA"	
"tobacco 21" AND "retail sales"	

Note: Some terms not used in Google Scholar due to the excessive number of returns.

Figure A-5. Publications from August 2018 Update (Non-Systematic Search)

Dai, H., Chaney, L., Ellerbeck, E., Cupertino, P., Friggeri, R., White, N., & Catley, D. (2018). <i>A Quasi-Experimental Study of the Effect of Tobacco 21 on Youth Smoking Prevalence in Kansas</i> . Poster.
Zhang, X., Vuong, T. D., Andersen-Rodgers, E., & Roeseler, A. (2018). <i>Evaluation of California's 'Tobacco 21' law</i> . <i>Tobacco Control</i> , tobaccocontrol-2017-054088. <a href="https://doi.org/10.1136/tobaccocontrol-2017-054088">https://doi.org/10.1136/tobaccocontrol-2017-054088</a>
Macinko, J., & Silver, D. (2018). <i>Impact of New York City's 2014 Increased Minimum Legal Purchase Age on Youth Tobacco Use</i> . <i>American Journal of Public Health</i> , 108(5), 669–675. <a href="https://doi.org/10.2105/AJPH.2018.304340">https://doi.org/10.2105/AJPH.2018.304340</a>

## ***Descriptive Statistics on Youth Smoking Rates Methodology***

To assess the number of potentially affected youth in Kansas, KHI examined data for Kansans age 15–17 and age 18–20 from the U.S. Census Bureau's 2016 American Community Survey (ACS) Five-Year (2012–2016) Estimates.<sup>106</sup> Data for age 15–17 were derived directly from the ACS, and data for age 18–20 were constructed from age categories for 18–19, and age 20.

While the ACS is a robust data set, there are a few limitations including that it is self-reported information (e.g., respondents may misreport age), it is not a point-in-time study and it uses five years of data to determine 2016 population estimates.<sup>107</sup>

To examine tobacco use behavior, KHI analyzed data from the YRBS retrieved from the Centers for Disease Control and Prevention (CDC) Youth Online system. The latest-available data for Kansas high school youth were from 2017. For the high school population (ninth to 12th grade), the 2017 YRBS survey sample was 14,765 for the United States and 2,413 for Kansas.<sup>108</sup> Again, there are a few limitations of these data including self-reported information (i.e., recall and response biases), survey administration to only school-enrolled youth (public or private) and each state's ability to include or exclude survey questions.<sup>109</sup>

Trend data for ever smoked a cigarette, currently smoke, and currently smoke cigarettes or cigars was also collected using the tool for the years 2005–2017.<sup>110</sup> This data allowed for larger trends in reported smoking-related activities to be examined. Certain questions were changed across time (e.g., smokeless tobacco), and trend data cannot be shown for those activities. Additionally, data were not available for 2015 due to an insufficient sample in Kansas that year. Based on these considerations, only select measures were presented. Finally, given the relatively recent emergence of e-cigarettes and other vaping products, no trend data are available for

Kansas for this information. The limitations of the trend data are similar to the limitations outlined in the preceding paragraph.

KHI did not examine data from Kansas Communities That Care (KCTC). While the KCTC data have some questions about substance use in primary school students, there are no questions that allow rates to be identified. The KCTC surveys, while informative, are also not weighted in a way to be representative of Kansas primary students in the state. Finally, the KCTC surveys changed from “opt-out” to “opt-in” in 2014 as a result of changing state law, which has impacted the number of survey respondents.<sup>111</sup>

To understand the usage of electronic cigarettes (e-cigarettes) nationwide, KHI analyzed data from the National Youth Tobacco Survey (NYTS) conducted by the CDC for the years 2013 and 2016. KHI examined the usage of e-cigarettes in the last 30 days (at least one day in the last 30). The samples for analysis (9,816 in 2013 and 10,712 in 2016) were based on high school students (ninth to 12th grade). KHI also reported data from the most recent Kansas Youth Tobacco Survey (2011–2012).<sup>112</sup> The limitations of these data were similar to the 2013 and 2017 YRBS including self-reported information (i.e., recall and response biases) and survey administration to only school-enrolled youth (public or private). In addition, some of the wording and question order in this survey also may influence responses.<sup>113 114</sup>

### ***Retail Impact of Tobacco 21 Implementation Methodology***

To assess the association between the implementation of Tobacco 21 ordinances and retail sales, KHI compared the change in taxable sales in gasoline stations with convenience stores before and after the implementation of Tobacco 21 in Wyandotte County to the changes in taxable sales during the same time period for comparable retailers in two other Kansas counties (Shawnee and Sedgwick). These two comparison counties did not have Tobacco 21 laws during the study period (January 2013–May 2017) and were chosen because they had similar smoking rates and urbanicity to Wyandotte County.

KHI examined monthly tax revenue data provided by the Kansas Department of Revenue for Wyandotte, Shawnee and Sedgwick Counties from January 2013 to May 2017. (Note that taxable sales in this study are defined as the monthly sales tax revenue reported for the retailer divided by the state sales tax rate.) Taxable sales are used to account for the change in Kansas sales tax rates across time. Among the identified retailers likely to sell tobacco products in



Kansas (tobacco stores, gasoline stations with convenience stores, convenience stores, supermarkets and other grocery stores, and pharmacies and drug stores), the study analyzed taxable sales only for gasoline stations with convenience stores for two primary reasons: (1) gasoline stations with convenience stores comprised the most complete dataset available for all three counties in our analysis, and (2) approximately one-third of revenue in convenience stores nationally comes from tobacco purchases.

Using the monthly taxable sales data, KHI modeled the trend of taxable sales from January 2013 through May 2017 to evaluate whether there was a statistically significant change before and after the implementation of the Tobacco 21 ordinance in Wyandotte County. KHI then compared the trend in Wyandotte County to those in Shawnee and Sedgwick Counties. Results with p-values less than 0.05 were considered statistically significant.

While the data used in this analysis provided a robust picture of taxable sales trends in the selected retailer type, there were some limitations to this analysis. The analysis did not consider potential effects of local sales tax rates, which also may affect consumer behavior. Also, the data were aggregated at the retailer level and the analysis presented here cannot assess changes, either positively or negatively, for any individual stores with the implementation of Tobacco 21 laws.

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## Appendix B: Kansas Population Estimates by County, 2016

Figure B-1. Count and Proportions of People Age 15–17, 18–20 and 15–20 in Kansas by County, 2016

Counties	Total Population	Age 15–17	%	Age 18–20	%	Age 15–20	%
Kansas	2,898,292	118,944	4.1%	128,215	4.4%	247,159	8.5%
Allen	12,951	488	3.8%	637	4.9%	1,125	8.7%
Anderson	7,858	325	4.1%	230	2.9%	555	7.1%
Atchison	16,557	676	4.1%	1,182	7.1%	1,858	11.2%
Barber	4,831	150	3.1%	147	3.0%	297	6.1%
Barton	27,214	1,156	4.2%	1,067	3.9%	2,223	8.2%
Bourbon	14,751	628	4.3%	738	5.0%	1,366	9.3%
Brown	9,810	364	3.7%	285	2.9%	649	6.6%
Butler	66,264	3,375	5.1%	2,803	4.2%	6,178	9.3%
Chase	2,694	103	3.8%	92	3.4%	195	7.2%
Chautauqua	3,470	130	3.7%	97	2.8%	227	6.5%
Cherokee	20,737	924	4.5%	803	3.9%	1,727	8.3%
Cheyenne	2,679	125	4.7%	79	2.9%	204	7.6%
Clark	2,131	107	5.0%	47	2.2%	154	7.2%
Clay	8,346	349	4.2%	268	3.2%	617	7.4%
Cloud	9,302	358	3.8%	547	5.9%	905	9.7%
Coffey	8,433	367	4.4%	237	2.8%	604	7.2%
Comanche	1,898	101	5.3%	20	1.1%	121	6.4%
Cowley	35,977	1,468	4.1%	1,836	5.1%	3,304	9.2%
Crawford	39,281	1,379	3.5%	2,981	7.6%	4,360	11.1%
Decatur	2,886	86	3.0%	88	3.0%	174	6.0%
Dickinson	19,384	775	4.0%	596	3.1%	1,371	7.1%
Doniphan	7,793	301	3.9%	721	9.3%	1,022	13.1%
Douglas	116,352	3,498	3.0%	13,078	11.2%	16,576	14.2%
Edwards	2,975	125	4.2%	113	3.8%	238	8.0%
Elk	2,635	92	3.5%	30	1.1%	122	4.6%
Ellis	29,032	975	3.4%	2,042	7.0%	3,017	10.4%
Ellsworth	6,375	227	3.6%	154	2.4%	381	6.0%
Finney	36,983	1,837	5.0%	1,811	4.9%	3,648	9.9%
Ford	34,492	1,547	4.5%	1,458	4.2%	3,005	8.7%
Franklin	25,663	1,048	4.1%	1,179	4.6%	2,227	8.7%
Geary	36,818	1,263	3.4%	1,645	4.5%	2,908	7.9%
Gove	2,682	81	3.0%	31	1.2%	112	4.2%
Graham	2,577	83	3.2%	53	2.1%	136	5.3%

**Figure B-1. Count and Proportions of People Age 15–17, 18–20 and 15–20 in Kansas by County, 2016 (continued)**

Counties	Total Population	Age 15–17	%	Age 18–20	%	Age 15–20	%
Grant	7,748	418	5.4%	258	3.3%	676	8.7%
Gray	6,037	306	5.1%	212	3.5%	518	8.6%
Greeley	1,235	51	4.1%	49	4.0%	100	8.1%
Greenwood	6,304	219	3.5%	165	2.6%	384	6.1%
Hamilton	2,567	103	4.0%	119	4.6%	222	8.6%
Harper	5,798	219	3.8%	154	2.7%	373	6.4%
Harvey	34,814	1,503	4.3%	1,445	4.2%	2,948	8.5%
Haskell	4,087	211	5.2%	231	5.7%	442	10.8%
Hodgeman	1,919	78	4.1%	53	2.8%	131	6.8%
Jackson	13,365	600	4.5%	480	3.6%	1,080	8.1%
Jefferson	18,880	858	4.5%	573	3.0%	1,431	7.6%
Jewell	3,003	105	3.5%	48	1.6%	153	5.1%
Johnson	572,428	24,426	4.3%	17,835	3.1%	42,261	7.4%
Kearny	3,943	182	4.6%	155	3.9%	337	8.5%
Kingman	7,697	337	4.4%	221	2.9%	558	7.2%
Kiowa	2,520	105	4.2%	134	5.3%	239	9.5%
Labette	20,833	836	4.0%	884	4.2%	1,720	8.3%
Lane	1,687	92	5.5%	59	3.5%	151	9.0%
Leavenworth	78,785	3,193	4.1%	2,812	3.6%	6,005	7.6%
Lincoln	3,134	138	4.4%	137	4.4%	275	8.8%
Linn	9,524	428	4.5%	231	2.4%	659	6.9%
Logan	2,800	112	4.0%	91	3.3%	203	7.3%
Lyon	33,401	1,296	3.9%	2,519	7.5%	3,815	11.4%
McPherson	29,164	1,202	4.1%	1,179	4.0%	2,381	8.2%
Marion	12,213	454	3.7%	627	5.1%	1,081	8.9%
Marshall	9,963	363	3.6%	243	2.4%	606	6.1%
Meade	4,310	219	5.1%	194	4.5%	413	9.6%
Miami	32,787	1,483	4.5%	1,029	3.1%	2,512	7.7%
Mitchell	6,299	253	4.0%	275	4.4%	528	8.4%
Montgomery	33,765	1,211	3.6%	1,500	4.4%	2,711	8.0%
Morris	5,694	209	3.7%	195	3.4%	404	7.1%
Morton	3,033	125	4.1%	256	8.4%	381	12.6%
Nemaha	10,177	486	4.8%	295	2.9%	781	7.7%
Neosho	16,358	696	4.3%	689	4.2%	1,385	8.5%
Ness	3,047	150	4.9%	87	2.9%	237	7.8%
Norton	5,558	184	3.3%	151	2.7%	335	6.0%
Osage	16,001	754	4.7%	534	3.3%	1,288	8.0%

**Figure B-1. Count and Proportions of People Age 15–17, 18–20 and 15–20 in Kansas by County, 2016 (continued)**

Counties	Total Population	Age 15–17	%	Age 18–20	%	Age 15–20	%
Osborne	3,746	135	3.6%	72	1.9%	207	5.5%
Ottawa	6,004	288	4.8%	247	4.1%	535	8.9%
Pawnee	6,840	336	4.9%	170	2.5%	506	7.4%
Phillips	5,484	237	4.3%	138	2.5%	375	6.8%
Pottawatomie	22,920	1,103	4.8%	692	3.0%	1,795	7.8%
Pratt	9,729	366	3.8%	481	4.9%	847	8.7%
Rawlins	2,557	76	3.0%	70	2.7%	146	5.7%
Reno	63,803	2,615	4.1%	2,554	4.0%	5,169	8.1%
Republic	4,768	160	3.4%	94	2.0%	254	5.3%
Rice	9,949	358	3.6%	611	6.1%	969	9.7%
Riley	75,026	1,704	2.3%	10,940	14.6%	12,644	16.9%
Rooks	5,160	207	4.0%	121	2.3%	328	6.4%
Rush	3,144	110	3.5%	69	2.2%	179	5.7%
Russell	6,988	271	3.9%	283	4.0%	554	7.9%
Saline	55,547	2,310	4.2%	2,440	4.4%	4,750	8.6%
Scott	4,958	212	4.3%	122	2.5%	334	6.7%
Sedgwick	508,221	21,587	4.2%	19,825	3.9%	41,412	8.1%
Seward	23,185	1,057	4.6%	1,244	5.4%	2,301	9.9%
Shawnee	178,567	7,251	4.1%	6,252	3.5%	13,503	7.6%
Sheridan	2,522	101	4.0%	17	0.7%	118	4.7%
Sherman	6,038	231	3.8%	227	3.8%	458	7.6%
Smith	3,701	144	3.9%	106	2.9%	250	6.8%
Stafford	4,284	196	4.6%	120	2.8%	316	7.4%
Stanton	2,115	121	5.7%	69	3.3%	190	9.0%
Stevens	5,738	302	5.3%	300	5.2%	602	10.5%
Sumner	23,509	1,070	4.6%	901	3.8%	1,971	8.4%
Thomas	7,909	299	3.8%	510	6.4%	809	10.2%
Trego	2,927	94	3.2%	62	2.1%	156	5.3%
Wabaunsee	6,960	298	4.3%	142	2.0%	440	6.3%
Wallace	1,584	69	4.4%	27	1.7%	96	6.1%
Washington	5,613	228	4.1%	144	2.6%	372	6.6%
Wichita	2,168	108	5.0%	61	2.8%	169	7.8%
Wilson	8,956	378	4.2%	240	2.7%	618	6.9%
Woodson	3,186	123	3.9%	65	2.0%	188	5.9%
Wyandotte	161,777	6,683	4.1%	5,585	3.5%	12,268	7.6%

Source: KHI analysis of data from the U.S. Census Bureau's 2016 American Community Survey Five-Year (2012–2016) Estimates.

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## Appendix C: States Enacting Law to Set the MLA to Age 21

As of December 2017, more than 17 percent of the country lives in a jurisdiction with a statewide (or territory) Tobacco 21 law. In 2015, Hawaii was the first state to raise the MLA to age 21. In 2016, California and Washington, D.C., enacted a Tobacco 21 law. In 2017, lawmakers in Guam, New Jersey, Maine and Oregon raised the MLA to age 21 (Maine’s legislators overrode Gov. Paul LePage’s veto). Also, lawmakers in Louisiana passed a resolution on June 2, 2017, seeking recommendations from state agencies about a Tobacco 21 policy.<sup>115</sup>

**Figure C-1. States and Territories Enacting Laws to Set the MLA for Tobacco Products to Age 21, 2017**

State/Territory	Bill or Statute	Effective Date	Summary	PUP/MIP Penalties
Hawaii June 19, 2015	<u>S.B. 1030</u> <u>SD1 HD2</u>	January 1, 2016	The law increased the minimum age for sale, possession, consumption, or purchase of tobacco products or electronic smoking devices from age 18 to age 21. Defines "tobacco products" to include electronic smoking devices.	Yes; to age 21. 1st offense = \$10 fine  Subsequent offense = \$50 fine plus 48–72 hours of community services
California March 2, 2016	<u>SB-7</u>	June 9, 2016	The law raised the legal age to buy products from age 18 to age 21 and tightened restrictions on e-cigarettes.	No
Washington D.C. November 29, 2016	<u>B21-0152</u>	February 18, 2017	The law prohibits the sale of cigarettes to those under age 21.	No
Guam March 23, 2017	<u>Bill No. 9-34</u>	January 1, 2018	The law prohibits the sale of tobacco products, including e-cigarettes, to individuals under age 21. The law also increased fines for businesses and retailers that sell tobacco products to those under age 21.	No

**Figure C-1. States and Territories Enacting Laws to Set the MLA for Tobacco Products to Age 21, 2017 (continued)**

State/Territory	Bill or Statute	Effective Date	Summary	PUP/MIP Penalties
New Jersey July 21, 2017	<u>S. 359</u>	November 1, 2017	The law increases the prior minimum age of sale from 19 to 21 and applies to both traditional tobacco products as well as e-cigarettes.	No
Maine August 2, 2017	<u>LD 1170</u>	July 1, 2018	The law phases in the new age of sale restrictions over three years, allowing anyone who turns age 18 on or before July 1, 2018, to purchase tobacco products. In addition, lawmakers expanded the definition of tobacco products to include e-cigarettes.	No
Oregon August 9, 2017	<u>SB 754</u>	January 1, 2018	In addition to prohibiting the sale of tobacco products to individuals under age 21, Oregon's law creates fines for businesses and individuals that violate the new age restrictions, includes e-cigarette systems in the definition of a tobacco product.	Prohibits individuals under age 21 from possessing tobacco products at schools, colleges, universities, and youth correctional facilities.

Note: For the most recent updates, please visit: <http://www.astho.org/state-legislative-tracking/>, Select "Tobacco Control," Next to "Preventing Youth Access," you may either "Select States" or "View All." Note that not all bills under "View All" pertain to increasing the MLA to age 21.

Source: KHI analysis of bills/statutes listed in the second column.



## Appendix D: Common Elements of Ordinances in Kansas

Figure D-1. Local Ordinances Adopted in Kansas, as of June 2018

Locality	Ordinances	Effective date	Specified Products	PUP/MIP Penalties
Unified Government of Wyandotte County and Kansas City, Kansas	<u>Ord. 0-65-15</u>	November 26, 2015	cigarettes, electronic cigarettes or tobacco products	Amend smoking restrictions to include vapor products.
Olathe	<u>Ord. 16-09</u>	February 6, 2016	cigarettes, electronic cigarettes, liquid nicotine or tobacco products	None
Iola	<u>Ord. 3455</u>	June 1, 2016	cigarettes, electronic cigarettes or tobacco products	None
Prairie Village	<u>Ord. 2346</u>	March 29, 2016	cigarettes, liquid nicotine or tobacco products	None
Westwood Hills	<u>Ord. 255</u>	August 14, 2017	cigarettes, electronic cigarettes and liquid nicotine products	None
Bonner Springs	Ord. 2422	July 1, 2016	cigarettes, electronic cigarettes or tobacco products	None
Lenexa	<u>Ord. 5525</u>	July 1, 2016	cigarettes, vapor products or tobacco products	Amend smoking restrictions to include tobacco, hookah and vapor products
Lansing	<u>Ord. 961</u>	July 1, 2016	cigarettes, electronic cigarettes or tobacco products	None
Overland Park	<u>Ord. POC-3125</u>	August 1, 2016	cigarettes, electronic cigarettes, liquid nicotine, or tobacco products	None

Figure D-1. Local Ordinances Adopted in Kansas, as of June 2018 (continued)

Locality	Ordinances	Effective date	Specified Products	PUP/MIP Penalties
Mission Hills	<u>Ord. 1454</u>	October 20, 2015	cigarettes, electronic cigarettes, liquid nicotine, or tobacco products	None
Westwood	<u>Ord. 971</u>	August 11, 2016	cigarettes, electronic cigarettes or tobacco products	None
Leavenworth	<u>Ord. 8053</u>	September 1, 2016	cigarettes, electronic cigarettes or tobacco products	None
Roeland Park	<u>Ord. 943</u>	November 21, 2016	cigarettes, electronic cigarettes, liquid nicotine, or tobacco products	Exempt current and former U.S. military
Leawood	<u>Ord. 2788C</u>	January 1, 2017	cigarettes, vapor products, or tobacco products	None
Merriam	<u>Ord. 1760</u>	January 1, 2017	cigarettes, electronic cigarettes, liquid nicotine, or tobacco products	None
Garden City	<u>UPOC 62.2(5.6)</u>	July 1, 2017	cigarettes, electronic cigarettes or tobacco products	Change in possession laws. Minors defined under age 21.
Johnson County (unincorporated)	<u>Res. 020-17</u>	July 1, 2017	cigarettes, electronic cigarettes, liquid nicotine, tobacco products	Amend smoking restrictions to include e-cigarettes
Shawnee County (unincorporated)	<u>HR-2017-2</u>	September 14, 2017	cigarettes, electronic cigarettes, tobacco products or liquid nicotine	None
Topeka*	<u>Section 5.7 of UPOC 2015</u>	Permanent Injunction on March 22, 2018	cigarettes, electronic cigarettes, tobacco products or liquid nicotine	None

Figure D-1. Local Ordinances Adopted in Kansas, as of June 2018 (continued)

Locality	Ordinances	Effective date	Specified Products	PUP/MIP Penalties
Parsons	<u>Ordinance No. 6405</u>	May 5, 2018	cigarettes, electronic cigarettes or tobacco products	Persons under age 21 may purchase with valid U.S military ID, or be born on or before April 2, 2000.
Holcomb	<u>Ord. 417</u>	June 13, 2018	cigarettes, electronic cigarettes or tobacco products	Cannot possess if under age 21. Cannot sell to or purchase for anyone under age 21.

\*Note: A Shawnee County District Court judge entered a permanent injunction prohibiting the enforcement of the Tobacco 21 ordinance in Topeka on March 22, 2018. The ruling appears to conflict with the opinion issued by Attorney General Derek Schmidt on December 28, 2017.

Source: KHI analysis of ordinances listed in the second column.

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## Appendix E: List of States and Pre-emption Laws

Figure E-1. State Pre-emption of Any Local Tobacco Control Ordinances Related to Youth Access, 2017

State	Pre-emption Law (22)	No Pre-emption (28)
Alabama/AL		X
Alaska/AK		X
Arizona/AR		X
Arkansas/AR		X
California/CA	X	
Colorado/CO		X
Connecticut/CT		X
Delaware/DE	X	
Florida/FL		X
Georgia/GA		X
Hawaii/HI		X
Idaho/ID		X
Illinois/IL		X
Indiana/IN	X	
Iowa/IA	X	
Kansas/KS		X
Kentucky/KY	X	
Louisiana/LA	X	
Maine/ME		X
Maryland/MD		X
Massachusetts/MA		X
Michigan/MI	X	
Minnesota/MN		X
Mississippi/MS	X	
Missouri/MO		X
Montana/MT	X	
Nebraska/NE		X
Nevada/NV	X	
New Hampshire/NH		X
New Jersey/NJ		X
New Mexico/NM	X	
New York/NY		X
North Carolina/NC	X	
North Dakota/ND		X
Ohio/OH		X
Oklahoma/OK	X	

**Figure E-1. State Pre-emption of Any Local Tobacco Control Ordinances Related to Youth Access, 2017 (continued)**

<b>State</b>	<b>Pre-emption Law (22)</b>	<b>No Pre-emption (28)</b>
Oregon/OR	X	
Pennsylvania/PA	X	
Rhode Island/RI		X
South Carolina/SC	X	
South Dakota/SD	X	
Tennessee/TN	X	
Texas/TX		X
Utah/UT	X	
Vermont/VT		X
Virginia/VA		X
Washington/WA	X	
West Virginia/WV		X
Wisconsin/WI	X	
Wyoming/WY	X	

Source: KHI analysis of the Centers for Disease Control and Prevention STATE System Preemption Fact Sheet, September 30, 2017.

## Appendix F: Endnotes

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<sup>1</sup> Ibid.

<sup>2</sup> Tobacco 21. (n.d.). Retrieved March 28, 2018, from <https://tobacco21.org/>

<sup>3</sup> U.S. Department of Health and Human Services. (2014). *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

<sup>4</sup> Ibid.

<sup>5</sup> U.S. Department of Health and Human Services. (2016). *E-Cigarette Use Among Youth and Young Adults. A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

<sup>6</sup> Ibid.

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