Health Impacts and Taxation of Electronic Cigarettes

Report prepared in response to HR155

Prepared by:

Tobacco Cessation and Prevention Program

Well-Ahead Louisiana | Bureau of Chronic Disease Prevention and Health Promotion

Office of Public Health

Melissa R. Martin, RDN, LDH, Bureau Director

Kristen Ortega, MPH, Tobacco Equity and Disparities Coordinator

Taylor Reine, Cessation Coordinator

Renee Underwood, MA, CHES, Special Projects Coordinator

Porsha Vallo, MPA, Tobacco Control Manager

Robin Rhodes, Healthy Communities Manager

Win Guan, PhD, Surveillance and Evaluation Manager

Anne McHugh, MPH, Chronic Disease Epidemiologist

Shanda J. McClain, JD, Attorney 4, Louisiana Department of Revenue

Ernest P. Legier, Jr., JD, Chief of Staff, Office of Alcohol and Tobacco Control

January 2018

LOUISIANA DEPARTMENT OF HEALTH

Contents

Executive Summary

This report is submitted pursuant to House Resolution 155 of the 2017 Legislative Session, which was authored by Representatives Hoffman and Leger. HR155 requested that the Louisiana Department of Health study the following issues associated with electronic cigarettes and other vapor products:

1. The rates at which electronic cigarettes are taxed in each U.S. state.
2. The health impacts associated with the use of electronic cigarettes.
3. Whether the use of electronic cigarettes should be promoted as a safe and effective means of quitting smoking.

Key highlights from this report include the following:

- The diversity and continuous development of e-cigarette products (different origins and design) and the varied ways in which consumers use these products, make the development of a standard measurement regarding the health impact of e-cigarettes challenging. Thus, little is known about the long-term health effects of e-cigarettes, but based on existing research, we do know that usage can lead to: nicotine addiction, developmental effects on the brain, behavioral or psychosocial harms, cardiovascular effects, and pregnancy complications.

- E-cigarettes have been shown to be less harmful than conventional cigarettes. Thus, if non-pregnant adult smokers use e-cigarettes to transition completely from combustible cigarettes, there is a potential beneficial impact on health. But, less harmful does not mean harmless (U.S. Department of Health and Human Services, 2016).

- Among youth and young adults, nicotine exposure through e-cigarettes can cause addiction and other adverse health effects, similar to conventional cigarettes.

- Although some people are quitting conventional cigarettes using e-cigarettes, there is no conclusive evidence that shows e-cigarettes as an effective approach to long-term cessation. The Federal Drug Administration has not approved e-cigarettes as a quit smoking aid. Preliminary studies have shown a prevalence and pattern of dual use (use of conventional cigarettes and e-cigarettes). Most adult e-cigarette users do not stop smoking cigarettes, but instead utilize both products (CDCb, 2017).

- Unlike conventional cigarettes, e-cigarette products are taxed differently across states. States define what constitutes an e-cigarette product and then determine the method and rate of taxation – a challenging task. Eight states currently tax e-cigarette products.

- Louisiana issues a specific tax on e-cigarette products at a rate of $0.05 per milliliter of e-liquid, consumable nicotine liquid solution, or other material containing nicotine that is depleted as a vapor product is used.

Section 1 – Background

1.1 – The Evolution of the Electronic Cigarette

The discovery that smoking causes lung cancer can be viewed as the first and most important advance in chronic disease etiology (Remington & Brownson, 2011). Entrepreneurs made early efforts in the 1880s and 1890s to promote novel products that allegedly blocked or filtered nicotine (U.S. Department of Health and Human Services, 2016). A variation and patent of a smokeless nontobacco cigarette first appeared in 1963 by Herbert A. Gilbert; it was then patented in 1965. The intention was to replace burning tobacco paper with a battery-powered heating element to heat flavored elements without combustion (Gilbert, 1965; U.S. Department of Health and Human Services, 2016). In 2003, Chinese pharmacist Hon Lik developed the electronic cigarette (e-cigarette). In 2004, e-cigarettes entered the Chinese market, gaining attention from Chinese smokers as a potential cessation device or an alternative cigarette product (Hon, 2013; Sanford & Goebel, 2014; U.S. Department of Health and Human Services, 2016). The first e-cigarette was introduced in the United States in 2007. By 2010, competing brands of e-cigarettes began to appear in the American market (U.S. Department of Health and Human Services, 2016). Between 2011 and 2012, the United States began to see an uptake in e-cigarette use among adults and youth.

1.2 – Definition of E-Cigarette

An e-cigarette is a type of electronic nicotine delivery system (ENDS) that allows users to inhale an aerosol, typically containing nicotine, flavorings and other additives, into the lungs (CDC *a*, 2017). Electronic nicotine delivery systems are composed of a battery, a heating element and a place to hold a liquid. They are typically grouped into three generations. The first generation are cigalikes. These devices are typically disposable or cartridges are screwed on (Hartmann-Boyce et al., 2016). The second generation are usually tank models. Tank products are known to provide better nicotine delivery, allowing for a wider choice of flavors and nicotine concentration (Dawkins, 2013; Farsalinos, 2014; Hartmann-Boyce et al., 2016). The third generation allows users to adjust the voltage level of the product (Hartmann-Boyce et al., 2016). Smokers are more likely to successfully quit using tank products versus cigalikes (Chen, 2016; Hitchman, 2015; Hartmann-Boyce et al., 2016).

While all ENDS products operate similarly, they often come in many shapes and sizes. Figure 1.2.1 shows the diversity of ENDS products by size and type of devices (CDC*a*, 2017). ENDS product names often differ across geographic regions, as well as by consumers and companies developing the product based on personal preference. Examples of varying types and names of ENDS products are: e-cigarettes, e-cigs, cigalikes, e-hookahs, mods, vape pens, vapes and tank systems (Richtel, 2014; Lempert et al., 2016). Throughout the report, the term e-cigarette will be used to refer to the board range of electronic nicotine delivery systems.

Figure 1.2.1: Diversity of E-Cigarette Products

Source: Photo by Mandie, Mills, (CDC)

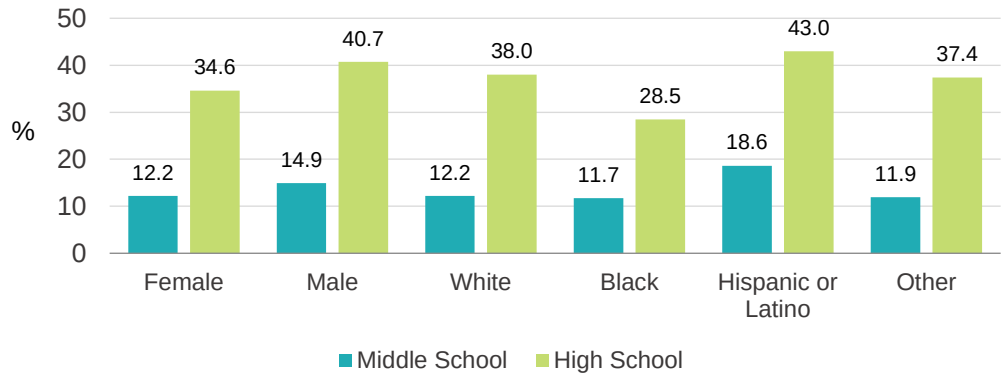
1.3 – National Youth E-Cigarette Prevalence

Prevalence rates of e-cigarette use among youth in America can be gathered from the National Youth Tobacco Survey (NYTS). The NYTS is a nationally representative survey of tobacco use among middle and high school students in the United States. E-cigarette "ever-use" is defined as whether the respondent had ever tried e-cigarettes. Current users are defined as whether the respondent had used e-cigarettes at least once in the past 30 days.

Demographics of Current National Youth Prevalence

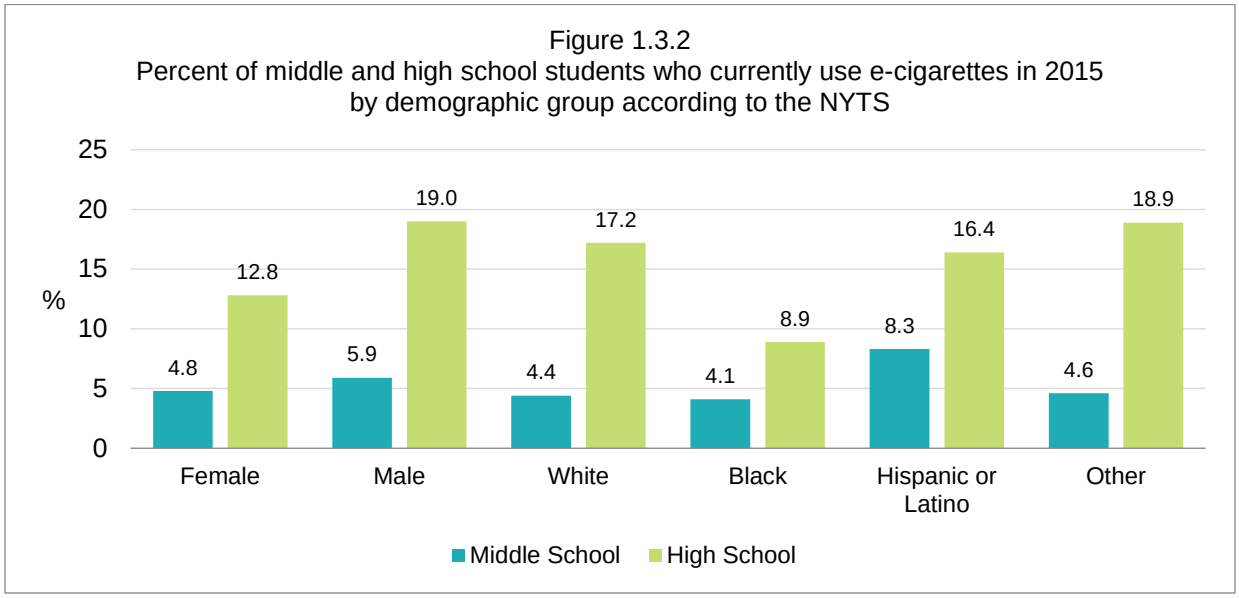
According to the 2015 NYTS, prevalence rates of e-cigarette ever-use and current use is higher among high school students than middle school students. Figure 1.3.1 (below) shows the demographic breakdown of e-cigarette ever-use by school level. For both middle and high school students, males (40.7% and 14.9%) have higher ever-use rates than females (34.6% and 12.2%). The Hispanic/Latino group has the highest rate of ever-use followed by white, other, and black.

Figure 1.3.1
Percent of MS and HS students in the US who have ever used e-cigarettes by demographic group according to the 2015 NYTS



Source: 2015 NYTS

Figure 1.3.2 (below) shows the same demographic breakdown for e-cigarette current users. The results are similar to ever-use. A larger percentage of males are current users of e-cigarettes compared to females. The racial breakdown is more interesting. Among high school students, current users of e-cigarettes are twice as likely to be white, Hispanic, and other race as compared to individuals who identify as black. This racial disparity is less pronounced among middle school students as the rates among white (12.2%), black (11.7%), and other race (11.9%) are relatively similar. Hispanic or Latino middle school students however have a significantly higher prevalence rate at 18.6%.

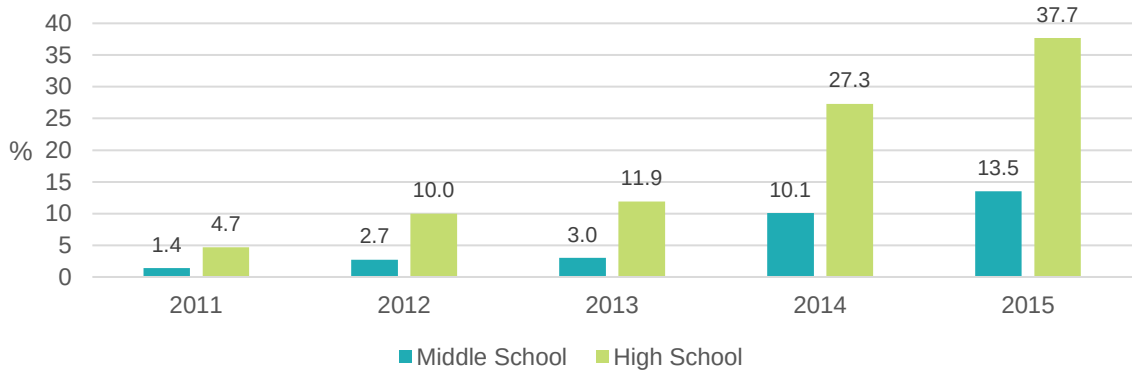


Source: 2015 NYTS

Trends in National Youth Ever-Use

The NYTS started collecting data on e-cigarettes in 2011. Figure 1.3.3 (below) shows the trend in e-cigarette ever-use from 2011 to 2015. Approximately 1.4% of middle school students in 2011 reported having ever-used e-cigarettes. NYTS from subsequent years showed a nonlinear increase to 10.1% in 2014 and 13.5% in 2015. This trend is similar among high school students. Approximately, 4.7% reported having ever-used e-cigarettes in 2011, but this number increased to 27.3% in 2014 and 37.7% in 2015.

Figure 1.3.3
Percentage of middle and high school students who have ever used e-cigarettes from 2011 to 2015 according to the NYTS

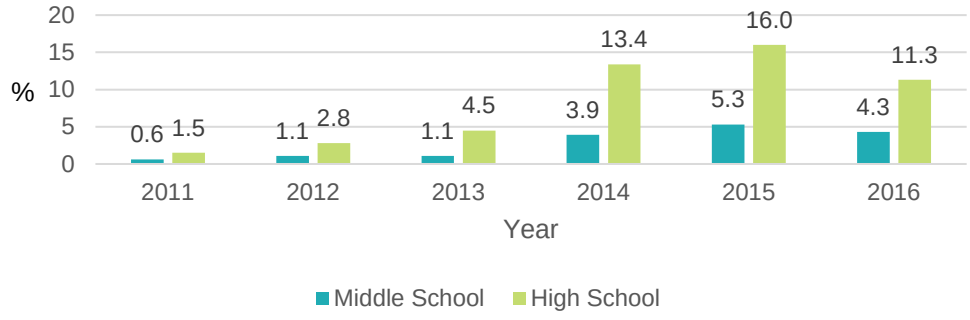


Source: 2011-2016 NYTS

Trends in National Youth Current Use

Figure 1.3.4 (below) shows the prevalence of current users of e-cigarettes among middle and high school students in America. Among middle school students in 2011, 0.6% reported having used e-cigarettes at least once in the past 30 days. This number stayed relatively the same until a dramatic increase in 2014 to 3.9% and 2015 to 5.3%. The trend is similar among high school students. In 2011, 1.5% reported being current users. In 2014, this number increased dramatically to 13.4% and 16.0% in 2015. The increase from 2013 to 2014 for both middle and high school students can partially be attributed to a change in how the question was asked in the survey (Surgeon General's Report, 2016). The previous question used to measure ever-use asked students the number of e-cigarettes they have ever used. Current question asks students if they ever tried e-cigarettes. However, according to the 2016 Surgeon General's report on "E-cigarette Use Among Youth and Young Adults," this increase is still indicative of a major change in a relatively short 5-year period. However, from 2015 to 2016, the rate of e-cigarette current use dropped from 5.3% to 4.3% among middle school students and 16.0% to 11.3% among high school students.

Figure 1.3.4
Percentage of middle and high school students who currently use e-cgarettes from 2011 to 2016 according to the NYTS.



Source: 2011-2016 NYTS

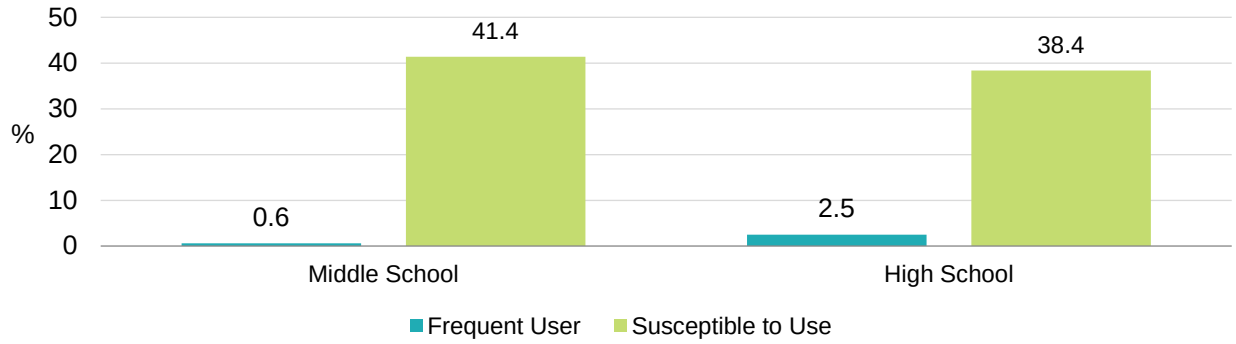
National Youth E-Cigarette Usage Characteristics

Figure 1.3.5 (below) shows additional characteristics of e-cigarette use among middle and high school students surveyed in the 2015 NYTS. Frequent users in the survey are defined as persons who used e-cigarettes 20 or more days in the past month. As shown, 0.6% of middle school students and 2.5% high school students frequently use e-cigarettes. Figure 1.3.5 also shows youth susceptibility to e-cigarette use. For this report, susceptibility to e-cigarette use was defined as failure to respond "definitely not" to any of the following questions among those who have never used e-cigarettes:

a) Do you think that you will try an electronic cigarette or e-cigarette soon?
b) If one of your best friends were to offer you an electronic cigarette or e-cigarette, would you use it?
c) Have you ever been curious about using an electronic cigarette or e-cigarette such as blu, 21st Century Smoke, or NJOY?.

As shown in the table, 41.4% of middle school students and 38.4% of high school students are susceptible to using e-cigarettes in the near future.

Figure 1.3.5
Percent of middle and high school students considered to be frequent e-cigarette users or susceptible to e-cigarette use according to the 2015 NYTS.



Source: 2015 NYTS

1.4 Louisiana Youth E-Cigarette Prevalence

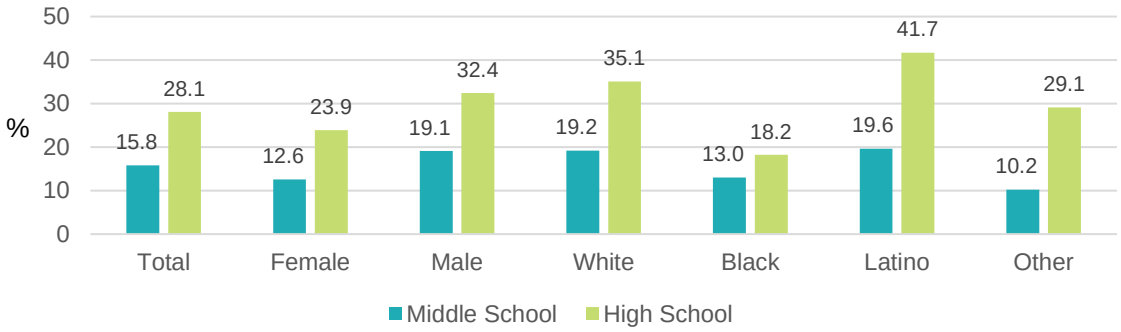
Information on youth tobacco use in Louisiana has been collected biennially in the Louisiana Youth Tobacco Survey (LYTS) since 2001. Definitions of e-cigarette ever-use, current-use, frequency of use, and susceptibility to use follow that of the NYTS.

Demographics of Current Louisiana Youth Prevalence

According to the LYTS in 2017, 15.8% of middle school students and 28.1% of high school students have ever used e-cigarettes. For current users, 8.6% of middle school students and 12.3% of high school students reported having ever used e-cigarettes. These prevalence rates are shown in Figures 1.4.1 and 1.4.2 (below). Additionally, demographic breakdowns are shown in these tables. For both school levels, males have higher rates of ever-use and current-use than females. For instance, among high school students, almost a third of males reported ever using e-cigarettes and approximately 14.9% reported being current users. For high school females, about a quarter reported having ever used e-cigarettes and 1 out of 10 females reported being current users. According to the racial breakdowns of ever-use and

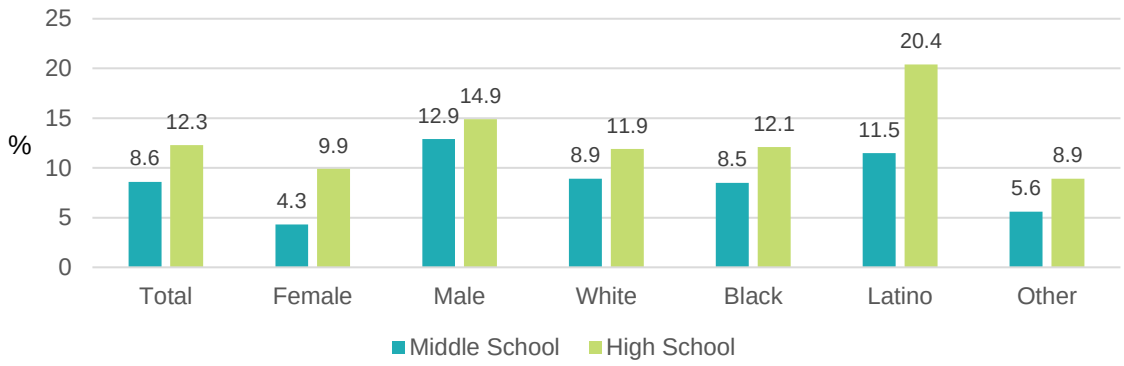
current-use, whites and Hispanic/Latinos have the highest rates of ever-use for both middle and high school students. In terms of current-use, Hispanic/Latinos are the most likely to use e-cigarettes with prevalence rates almost double that of white and black respondents.

Figure 1.4.1
Percentage of Louisiana middle and high school students who have ever used e-cigarettes by demographic groups according to the 2017 LYTS.



Source: 2017 LYTS

Figure 1.4.2
Percent of Louisiana middle and high school students who currently use e-cigarettes by demographic groups according to the 2017 LYTS.

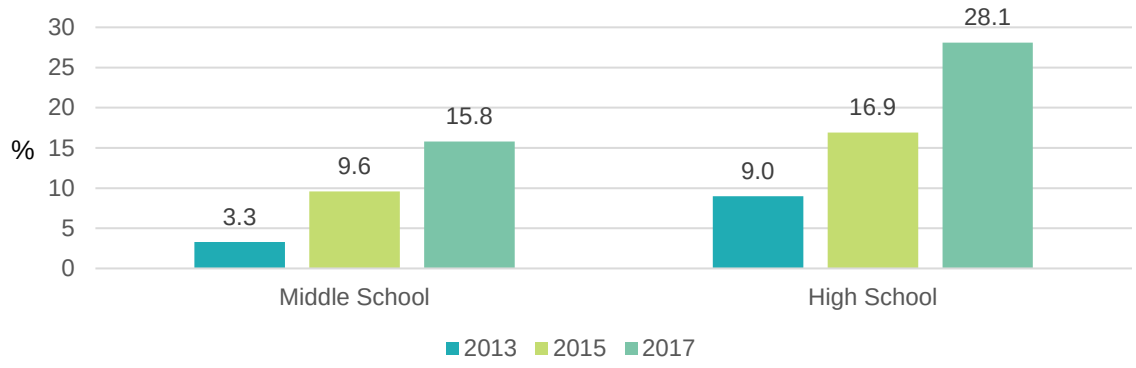


Source: 2017 LYTS

Trends in Louisiana Youth Ever-Use

The percentage of middle and high school students who reported ever using e-cigarettes in the LYTS increased dramatically from 2013 to 2017. Shown in Figure 1.4.3 below, in 2013, only 3.3% of middle school students reported ever-use. This rate increased to 15.8% in 2017. Similarly, the 9.0% prevalence rate among high school students in 2013 increased to 28.1% in 2017. Using the 2015 LYTS and NYTS, we can compare the LA state rates to the national rates. Ever-use among both middle school and high school students in Louisiana were significantly lower than those in the US.

Figure 1.4.3
Percentage of Louisiana middle and high school students who have ever used e-cigarettes from 2013 to 2017 according to the LYTS

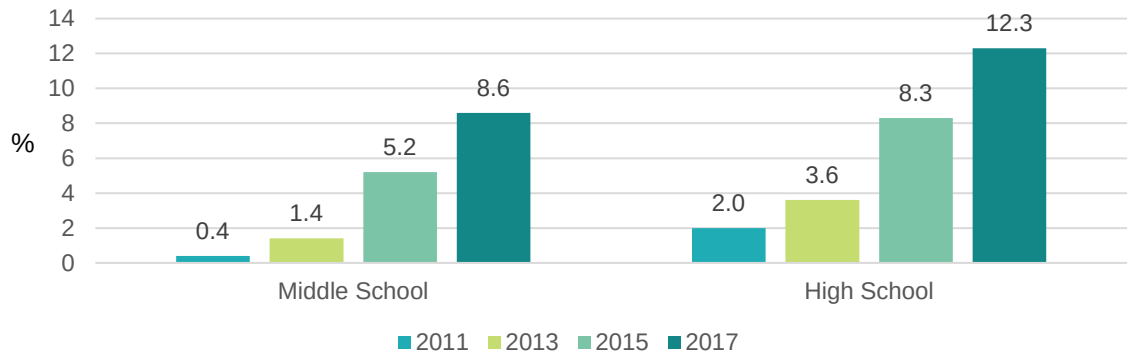


Source: 2013-2017 LYTS

Trends in Louisiana Youth Current Use

Although the LYTS did not include data on e-cigarette ever-use prior to 2013, the survey did gather information on current users of e-cigarettes in 2011. The current-use trend is similar to ever-use shown in Figure 1.4.4. Rates of current use increased non-linearly from 2011 to 2017. Among middle school students, 0.4% in 2011, 1.4% in 2013, 5.2% in 2015, and 8.6% in 2017 reported using e-cigarettes at least once in the past 30 days. The rates for high school students in LA were 2.0% in 2011, 3.6% in 2013, 8.3% in 2015, and 12.3% in 2017. Compared to the national prevalence in 2015 gathered by the NYTS, Louisiana had similar rates among middle school students (5.2% LA; 5.3% US), but had significantly lower rates among high school students (8.3% LA; 16.0% US).

Figure 1.4.4 Percent of Louisiana middle and high school students who currently use e-cigarettes from 2011 to 2017 according to the LYTS

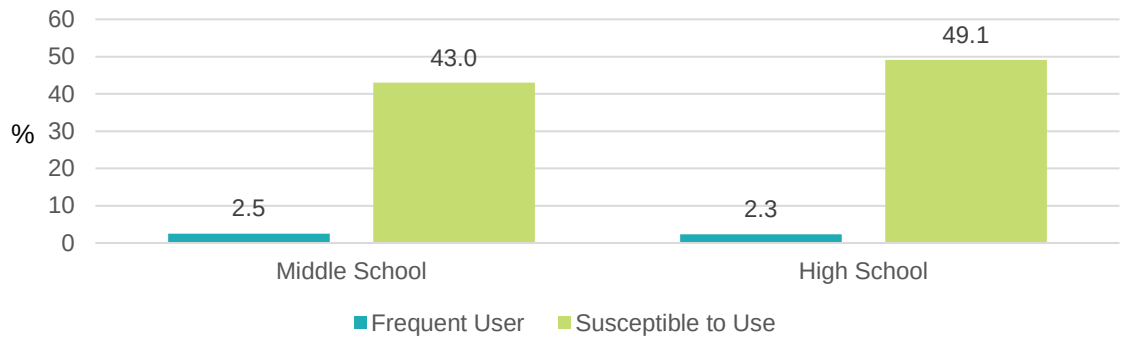


Source: 2011-2017 LYTS

Louisiana Youth E-Cigarette Usage Characteristics

According to the 2017 LYTS, 2.5% of middle school students and 2.3% of high school students reported being frequent users of e-cigarettes. These rates are shown in Figure 1.4.5 (below).

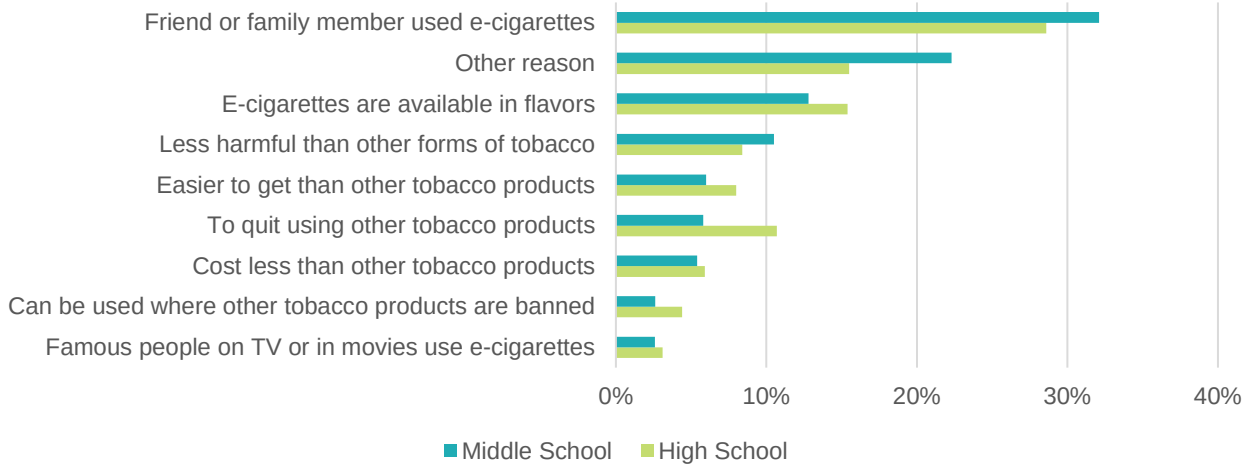
Figure 1.4.5
Frequent use and susceptibility to e-cigarette use among LA students according to the 2017 LYTS.



Source: 2017 LYTS

In addition, among youth who have never used e-cigarettes, 43.0% of middle school students and 49.1% of high school students are susceptible to future use of e-cigarettes. Figure 1.4.6 (below) shows reasons for using e-cigarettes reported by middle and high school students in the 2017 LYTS sample. Over a quarter of respondents for both school levels reported using e-cigarettes because a friend or family member also used them.

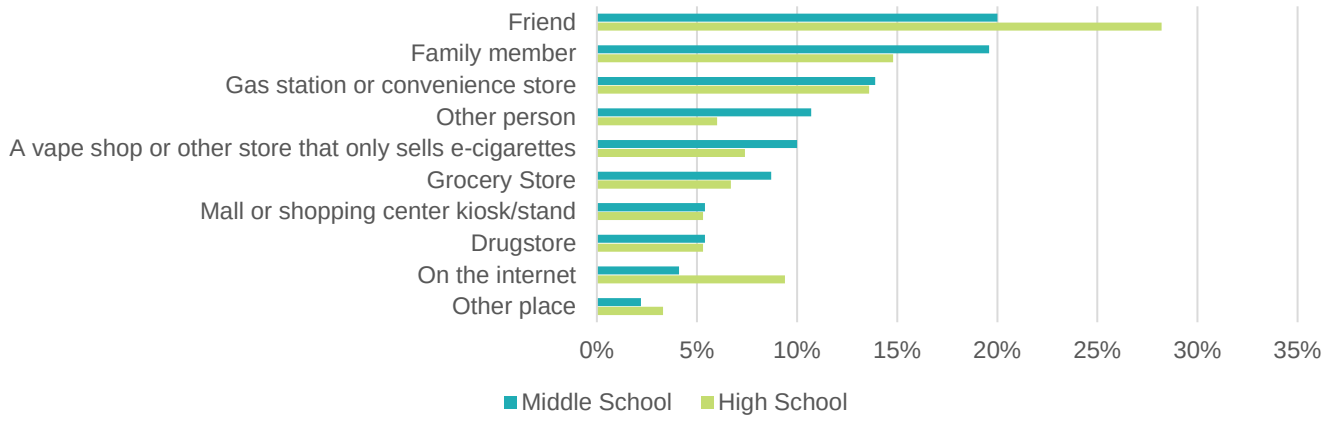
Figure 1.4.6
Reasons Louisiana middle and high school students are using e-cigarettes, according to the 2017 LYTS.



Source: 2017 LYTS

Other common reasons included the available flavors and the respondents' belief that e-cigarettes are less harmful than other forms of tobacco. Figure 1.4.7 (below) shows where respondents are attaining their e-cigarettes. Both middle and high school students are most likely to get e-cigarettes from friends or family.

Figure 1.4.7
Where Louisiana middle and high school students are purchasing e-cigarettes, according to the 2017 Louisiana Youth Tobacco Survey.

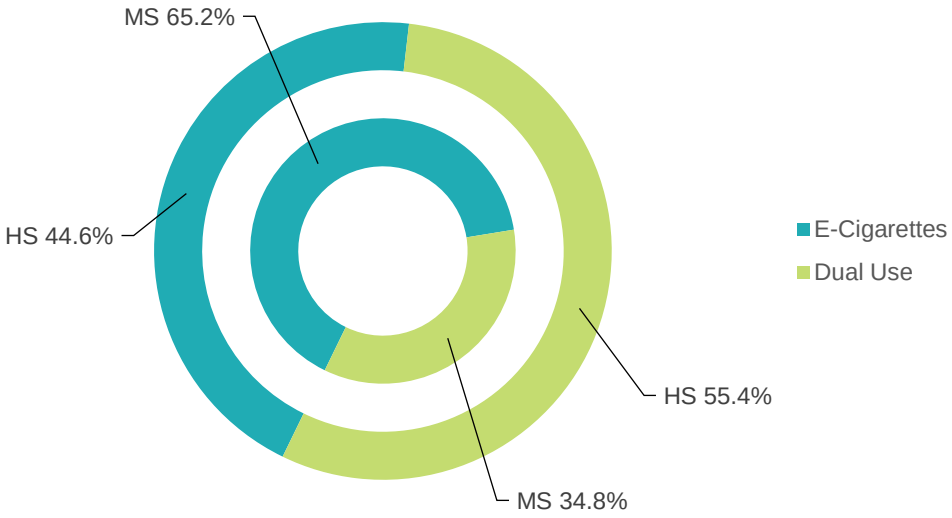


Source: 2017 LYTS

Dual Use Among Louisiana Youth

Figure 1.4.8 (below) shows the percentage of students who use e-cigarettes that also smoke cigarettes. This data was collected from the 2017 LYTS. Approximately 37.4% of middle school students who use e-cigarettes also smoke cigarettes. The use of both e-cigarettes and cigarettes appears more popular among high school students. Approximately 55.4% of high school students who use e-cigarettes also smoke cigarettes.

Figure 1.4.8 Percent of Louisiana middle school students who use e-cigarettes or both e-cigarettes and cigarettes according to the 2017 Louisiana Youth Tobacco Survey.



Source: 2017 LYTS

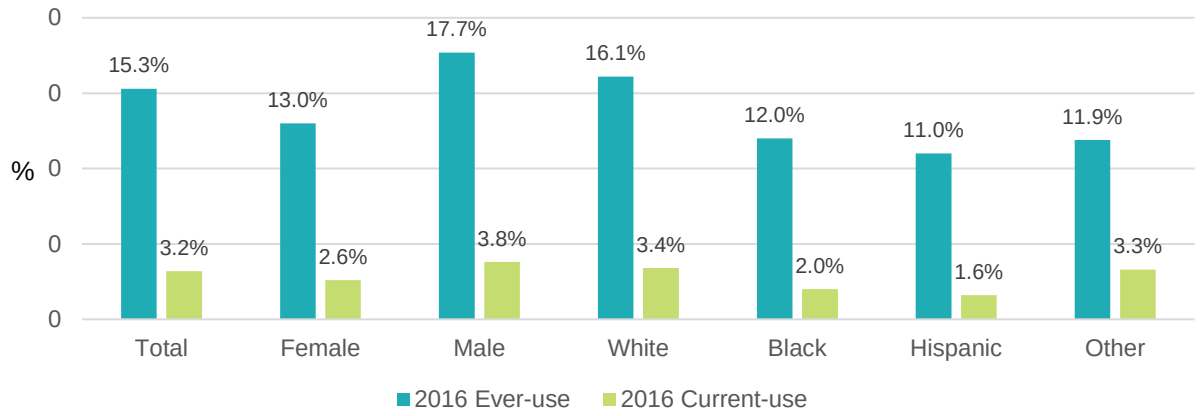
1.5 – National Adult E-Cigarette Prevalence

National prevalence rates of e-cigarette use among adults are gathered from the National Health Interview Survey (NHIS). The NHIS has collected data on e-cigarette use since 2014 and annually thereafter. Ever-use in NHIS is defined as whether the respondent has ever used an e-cigarette. Current-use in the NHIS is defined as if individuals responded "everyday" or "some days" to how often they use cigarettes.

Demographics of Current Prevalence

Figures 1.5.1 and 1.5.2 below show the demographic breakdown of current and ever e-cigarette usage among adults in the United States. Males have higher rates of ever-use (17.7%) and current use (3.8%) than females (13.0% and 2.6%, respectively). White adults have the highest rates of e-cigarette ever-use (16.1%) compared to black (12.0%) and Hispanic adults (11.0%). This trend is similar for e-cigarette current-use. Approximately 3.4% of white adults currently use e-cigarettes while 2.0% of black adults and 1.6% of Hispanic adults currently use e-cigarettes.

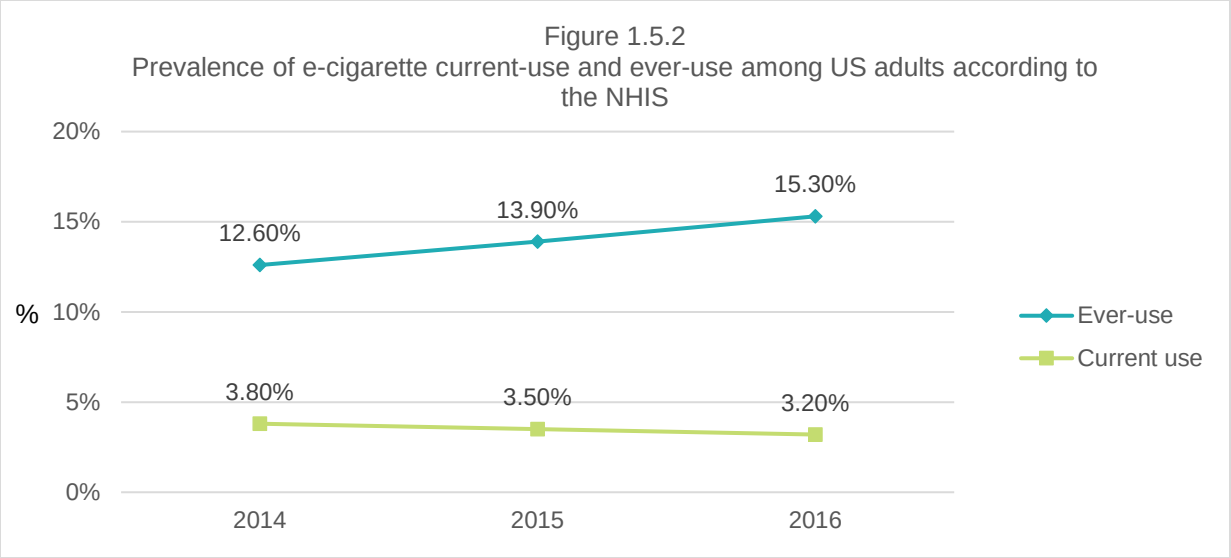
Figure 1.5.1
Ever-use and current-use of e-cigarettes by demographic group according to the 2016 NHIS



Source: 2016 NHIS

Prevalence of Current-use and Ever-use

Figure 1.5.3 shows the prevalence of e-cigarette ever-use and current-use among US adults between the ages of 18-24 and US adults aged 25 and over. As shown, 12.6% of adults had ever used e-cigarettes in 2014. This percentage rose to 15.3% in 2016. Current-users of e-cigarettes have generally remained stable from 3.8% in 2014 to 3.2% in 2016.



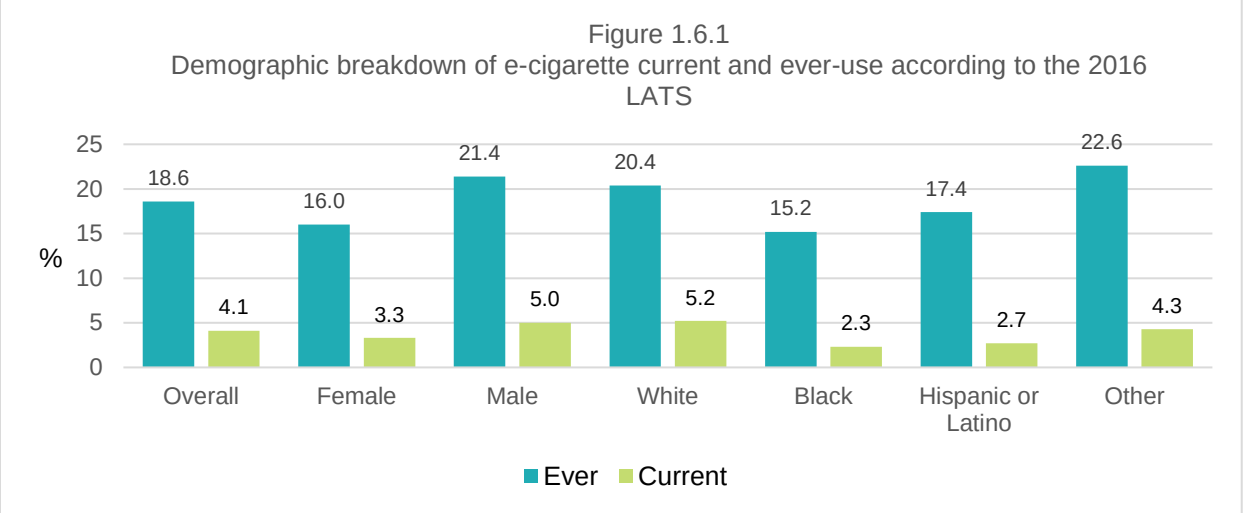
Source: 2014-16 NHIS

1.6 Louisiana Adult E-Cigarette Prevalence

Information on adult tobacco use in Louisiana has been collected biennially in the Louisiana Adult Tobacco Survey (LATS) since 2001. The prevalence rates of e-cigarette use come from the 2016 LATS.

Demographics of Current Prevalence

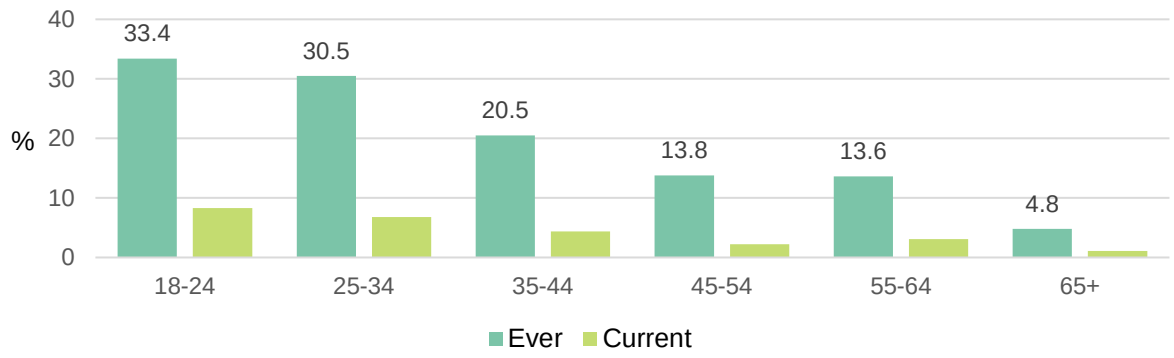
Figure 1.6.1 (below) shows the sex and racial breakdowns of e-cigarette ever and current-use. Males have higher rates of e-cigarette use than females. Respondents who identify as white or other have higher rates than black or Hispanic/Latino respondents.



Source: 2016 LATS

Figure 1.6.2 (below) shows the prevalence rates of ever-use and current-use by age groups. As shown, e-cigarette usage is highest among young adults 18-24 and 25-34. Rates of e-cigarette use decrease as age increases.

Figure 1.6.2
E-cigarette ever-use and current-use prevalence rates by age group according to the 2016 LATS

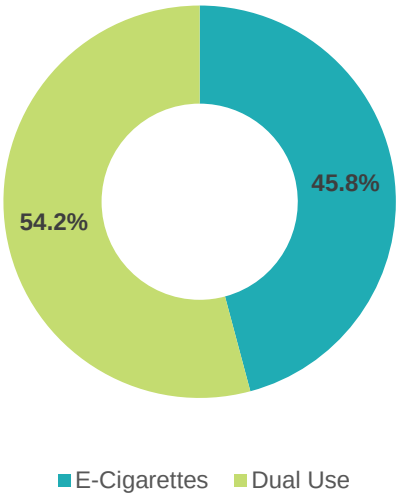


Source: 2016 LATS

Dual Use Among Louisiana Adults

Figure 1.6.3 shows the percentage of adults who use e-cigarettes that also smoke cigarettes in Louisiana in 2016. According to the data, 54.2% of adults who use e-cigarettes also smoke cigarettes.

Table 1.6.3 Percent of Louisiana adults who are using cigarettes, e-cigarettes, or both according to the 2016 Louisiana Adult Tobacco Survey.



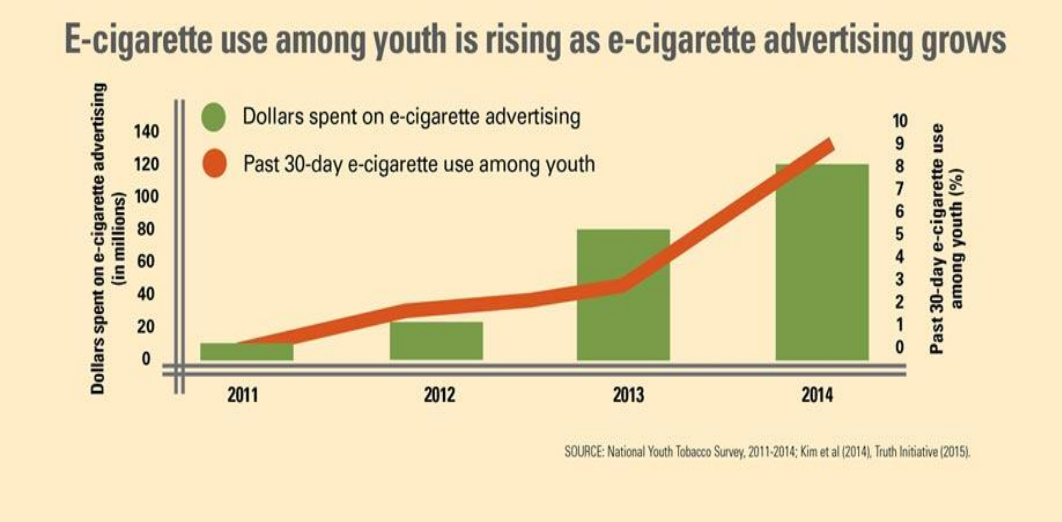
Source: 2016 LATS

1.7 – E-Cigarette Marketing Tactics Among Youth

Marketing tactics used to promote e-cigarettes are similar to those used to promote conventional cigarettes. These channels include internet marketing, as well as mainstream media marketing, including but not limited to, popular magazines, retailer point of sale ads, and product placement in popular movies, television series, etc. (U.S. Department of Health and Human Services, 2016). E-cigarettes can also be marketed via television advertising, as well as sports and music sponsorships. These marketing tactics are not available to conventional cigarettes. In the past, e-cigarette samples were dispersed, at no cost, at large youth-specific events such as music festivals. Effective August 2016, free e-cigarettes samples have been banned (U.S. Department of Health and Human Services, 2016).

Marketing tactics such as these are a public health concern because of their propensity to influence smoking behaviors among youth (U.S. Department of Health and Human Services, 2016). Figure 1.7.1 shows the correlation between e-cigarette use and e-cigarette advertising. E-cigarette use among youth increases as e-cigarette advertising grows. This is consistent with research that shows a causal relationship between tobacco marketing and smoking among youth (Biener & Siegel, 2000, U.S. Department of Health and Human Services, 2016; CDC*b, 2017*).

Figure 1.7.1: Correlation Between E-Cigarette Use and E-Cigarette Advertising



Section 2 – Health Impacts of E-Cigarettes

The 2016 Surgeon General's Report explored the short-term and potential long-term health effects of youth and young adults related to the incidence and continued use of e-cigarettes. The Report supports that nicotine exposure through conventional cigarettes among youth causes addiction and other adverse health effects, which is also relevant to e-cigarettes. Specifically, the Report states:

> The potential adverse health effects for youth who inhale e-cigarette aerosol include those on the body from acute administration of nicotine, flavorants, chemicals, other particulates, and additional effects, such as the following:
>
> - nicotine addiction,

- developmental effects on the brain from nicotine exposure, which may have implications for cognition, attention, and mood,
- e-cigarette influence initiating or supporting the use of conventional cigarettes and dual use of conventional cigarettes and e-cigarettes,
- e-cigarette influence on subsequent illicit drug use,
- e-cigarette effects on psychosocial health, particularly among youth with one or more comorbid mental health disorders, and
- battery explosion and accidental overdose of nicotine. (U.S. Department of Health and Human Services, 2016, p.100)

Among adult non-pregnant conventional cigarette smokers, e-cigarettes have shown to be significantly less harmful that conventional cigarettes, but only if the smoker transitions completely to e-cigarettes (U.S. Department of Health and Human Services, 2016). Figure 2 addresses the potential harms and benefits of e-cigarettes for both youth and adults.

Figure 2: Comparative Risk Assessment: Potential Harms and Benefits of E-Cigarettes

Harms	Benefits
Increased youth exposure to nicotine and potentially greater initiation of conventional cigarettes	Reduced disease risk for current smokers who switch completely to e-cigarettes
Slowing cessation due to nicotine addiction	Reduced morbidity for current smokers with lung and heart disease
Renormalizing nicotine and tobacco use	Potential for complete cessation
Future risk of disease for exposed youth	Fewer users of combustible tobacco products in the population
Increased dual use of e-cigarettes and combustible products	
Exposure to secondhand aerosol	
Gateway to conventional tobacco products	

Source: U.S. Department of Health and Human Services, 2016

2.1 – Nicotine Exposure

More people in the United States are addicted to nicotine than to any other drug (American Society of Addiction Medicine, 2008). Its additive properties are only benign in the context of nicotine replacement therapy for adult smokers. The primary concerns about the health impacts of nicotine are among pregnant women and young people.

Specific adverse health effects of e-cigarettes are difficult to determine due to the customizable options for dosage of the e-liquid in e-cigarettes. E-liquid is the mixture used in e-cigarettes products. E-liquid

generally consists of propylene glycol, glycerin, water, nicotine, and flavorings. It is known that exposure to nicotine has been linked with a potential initiating factor in the atherogenic process within arteries (Lee et al., 2011; Santanam et al., 2012; Benowitz and Burbank, 2016). Additionally, acute administration of nicotine can lead to cardiovascular effects such as increased heart rate and blood pressure, as well as to several other cardiovascular effects (Rosenberg et al., 1980; USDHHS, 2014). The unknown health risks for e-cigarettes align with the risks associated with the nicotine present in conventional cigarettes. One study shows that e-cigarettes and conventional cigarette exert similar adverse cardiovascular effects (Benowitz and Burbank, 2016; Bhatnagar, 2016).

Nicotine Exposure: During Adolescence

Nicotine exposure during adolescence can cause addiction and harm to the developing adolescent brain. Nicotine, a psychomotor stimulant drug, is the primary psychoactive and addictive constituent in the smoke of conventional cigarettes and an important determinant in maintaining smoking dependence (USDHHS, 2014). Nicotine can be found in the liquid (e-liquid) of the e-cigarette. Studies have shown that e-cigarette users can regulate the amount of e-liquid being consumed, which alters the amount of nicotine received. According to the 2016 Surgeon General Report, acute administration of nicotine causes a variety of well-characterized, dose- and route-dependent effects in adults, such as increases heart rate, blood pressure, and greater cardiac output. This can lead to an increase in myocardial oxygen demand (Rosenberg et al., 1980; USDHHS, 2014).

In more experienced e-cigarette users, blood nicotine levels are influenced by puffing patterns, such as puff length. Dawkins and Corcoran (2014) observed large individual differences in plasma nicotine levels ranging from 2.50 to 13.4 mg/mL after 10 puffs of an e-cigarette. This suggests that e-cigarette users adjust puff duration and volume to maintain a desired nicotine level. Figure 2.1.1 shows plasma nicotine concentrations from studies with blood sampled before and immediately after 10 puffs of tobacco products.

Figure 2.1.1: Plasma Nicotine Concentration Levels After 10 Puffs of Nicotine

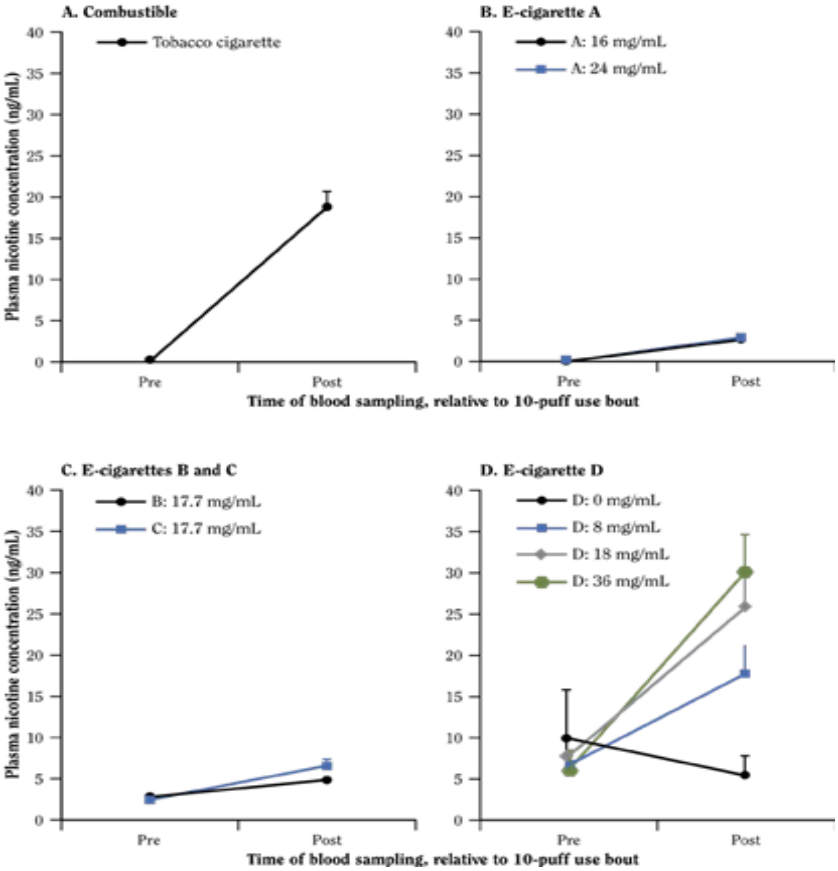


Figure 2.2.1 suggests that various strength e-liquids achieve high plasma nicotine levels very quickly – matching and exceeding those reported in conventional cigarette smokers (Surgeon General's Report, 2016).

Youth consumers may be particularly vulnerable to the consequences of nicotine exposure, including an increase in drug-seeking behaviors (Kandel and Kandel, 2014), deficits in attention and cognition, and mood disorders (Yuan et al., 2015). Long-term studies on the safety of nicotine-only exposure from e-cigarettes have not been conducted. Subsequently, little is known about the long-term health impacts.

Nicotine Exposure: In Pregnancy

Nicotine can cross the placenta and has known adverse effects on fetal and postnatal development (U.S. Department of Health and Human Services, 2016). Therefore, nicotine delivered by e-cigarettes during pregnancy can result in multiple adverse consequences, including sudden infant death syndrome, and could result in altered corpus callosum, deficits in auditory processing, and obesity. The concern with studies on the maternal use of tobacco during pregnancy and offspring use of tobacco is finding the sole effect nicotine has on the fetus in relation to the other social, environmental, and cognitive factors that also predict offspring tobacco use (U.S. Department of Health and Human Services, 2016). Furthermore, studies on both humans and animals show a neurotoxic effect of fetal nicotine exposure. Pregnant women and women intending to become pregnant should be cautioned against using e-cigarettes to avoid

Source: Vansickel et al. (2010); Farsalinos et al. (2014b); Yan and D'Ruiz (2015); and Ramoa et al. (2016).

unnecessary nicotine exposure to their baby.

2.2 – E-Cigarette Chemicals

E-cigarettes can expose users to several chemicals, including nicotine, carbonyl compounds, and volatile organic compounds, known to have adverse health effects. The health effects and potentially harmful doses of heated and aerosolized constituents of e-cigarette liquids, including solvents, flavorants, and toxicants, are not completely understood. Carcinogens (e.g., formaldehyde, acetaldehyde, and acrolein) and toxic heavy metals (e.g., lead and cadmium) have been found in e-cigarette aerosols in laboratory tests conducted at temperatures within the range of most e-cigarette products (U.S. Department of Health and Human Services, 2016). However, the variety of products (different origins and designs), the rapid emergence of new products, and the varied ways in which consumers use these products make the development of standard measurement conditions challenging (Famele et al., 2015). Examination is also required to recognize whether potential health risks may be enhanced by changes in product manufacturing. Ingestion of e-cigarette liquids containing nicotine can cause acute toxicity and possibly death if the contents of refill cartridges or bottles containing nicotine are consumed (U.S. Department of Health and Human Services, 2016). Commercial and custom-mixed e-liquids are produced with undisclosed manufacturing procedures, packaging materials, and purity standards for their constituents, increasing the risks of potential health consequences (U.S. Department of Health and Human Services, 2016).

E-Cigarette Flavorants

The e-liquid in e-cigarettes often contains flavorants. There are currently more than 7,700 unique e-cigarette flavorants are on the market. Some flavorants (vanilla, maple and coconut, etc.) contain a chemical called diacetyl (American Lung Association, 2016). When inhaled, diacetyl can cause bronchiolitis obliterans – frequently referred to as “popcorn lung" (American Lung Association, 2016). Popcorn lung is a “scarring of the tiny air sacs in the lungs resulting in the thickening and narrowing of the airways” (American Lung Association, 2016). It “causes coughing, wheezing and shortness of breath, similar to the symptoms of chronic obstructive pulmonary disease (COPD)” (American Lung Association, 2016). A Harvard study found that 39 of 51 e-cigarette brands contained diacetyl (Allen et al., 2015). In addition, the study found two similarly harmful chemicals, pentanedione and acetoin, present in 23 and 46 of the 51 flavors it tested (Allen et al., 2015).

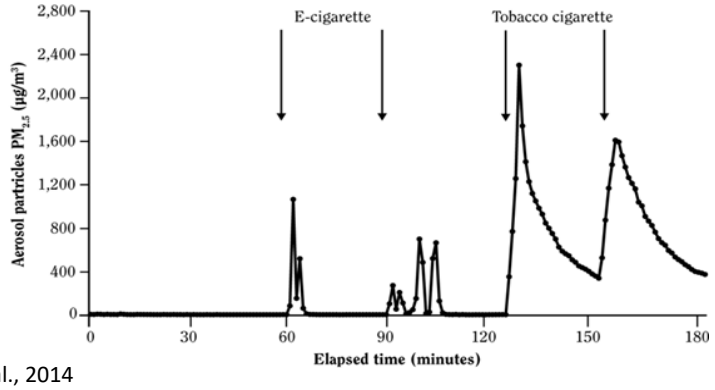
2.3 – E-Cigarette Aerosol

Although e-cigarettes generally contain fewer toxicants than combustible tobacco products, e-cigarette aerosol is not harmless water vapor. E-cigarette aerosol is generated when the e-liquid is heated. Hazardous carcinogens have been detected in the aerosol produced by e-cigarettes (U.S. Department of Health and Human Services, 2016). The aerosol generated by e-cigarettes can contain up to 31 compounds including nicotine, nicotyrine, formaldehyde, acetaldehyde glycidol, acrolein, acetol, diacetyl and more (Sleiman et al. 2016). Glycidol is a carcinogen not previously identified in the e-liquid and acrolein is a powerful irritant (Sleiman et al. 2016). Although these components have been identified in e-cigarette aerosol, evidence is unclear on whether typical user dosages achieve levels as high as conventional

cigarettes, or at harmful or potentially harmful levels. More information is projected to be available in the coming years as e-cigarette manufacturers begin reporting harmful or potential harmful constituents in compliance with the Tobacco Control Act (U.S. Department of Health and Human Services, 2016).

Concentrations of fine particle matter and nicotine are the two most common markers used to measure exposure to secondhand smoke (Avila- Tang et al. 2010; Apelberg et al. 2013). E-cigarettes are a source of extremely high doses of fine particle matter (e.g., aerosol) in the respiratory system. Fine particles are emitted when the solvents are aerosolized. Mild respiratory effects have been documented, but adequate assessments are still lacking (U.S. Department of Health and Human Services, 2016). Figure 2.3.1 shows the significant increase in aerosol concentration from e-cigarettes after about one hour and the subsequent rapid decline. (U.S. Department of Health and Human Services, 2016).

Figure 2.3.1: Aerosol Concentration from E-Cigarettes



Source: SGR Czogala et al., 2014

It is important not to rely solely on PM mass concentrations for determining exposure to e-cigarette aerosol and for making comparisons with conventional cigarettes, because there may still be significant amounts of e-cigarette aerosol in the environment, but it cannot be measured, as it is either in the aerosol phase or deposited on surfaces (U.S. Department of Health and Human Services, 2016).

Although some typical constituents of the e-cigarette aerosol have been identified, the short and long-term health impacts of aerosolized constituents of the e-liquids still require more research.

2.4 – Secondhand Smoke and Passive Exposure

Exposure to secondhand smoke from combustible tobacco products is a known cause of morbidity and mortality (USDHHS, 2006). Secondhand smoke, a mixture of the side stream smoke from a cigarette and the mainstream smoke exhaled by a smoker, is known to contaminate both indoor and outdoor environments. The deposited constituents of combustible smoke are known as “thirdhand smoke” (Matt et al., 2011; Protano & Vitali, 2011). E-cigarettes represent another potential source of exposure to toxicants for nonusers, via secondhand or thirdhand exposure to aerosol.

In contrast to combustible tobacco products, e-cigarettes do not produce side stream emissions; aerosol is produced during activation of the device. It is still unclear how much of inhaled aerosol is exhaled into

the environment exposing non-users. An FDA study measured airborne nicotine in the homes of e–cigarette users (Ballbe et al., 2014). The concentration of e-cigarette aerosol in a given environment depends predominantly on the strength of the source or the number of e-cigarettes used and the emission rate of the aerosol for that device. The number of puffs and depth of inhalation may be particularly relevant to the amount exhaled by the user and may also affect e-cigarette emissions (Talih et al., 2016). Flouris and colleagues (2012, 2013) conducted two clinical studies of the health effects of secondhand exposure to e-cigarette aerosol. The researchers found no short-term change in markers of complete blood count after one hour of exposure to e-cigarette aerosol in a group of 15 nonsmokers (Flouris et al., 2012). Similarly, the same exposure caused no significant change in short-term lung function (Flouris et al., 2013). However, these studies demonstrated that passive exposure to e-cigarettes cause an increase in serum cotinine that is similar to that from passive exposure to cigarette smoke, suggesting the need to research inhalation on long-term lung function (Flouis et al., 2013). Additionally, restricted effects would likely occur in the short exposure observed through the practices of researchers, these studies did not account for continued and persistent second or thirdhand exposure to e–cigarette aerosols.

2.5 – Summary

The diversity of products (different origins and design), the development of new products, and the varied ways in which consumers use e-cigarette products, make the development of standard measurement conditions challenging (Famele et al., 2015). Further research is needed to recognize how different design features relate to potential toxicity and whether potential health risks may be enhanced by changes in product engineering. Although, it is known that the nicotine and aerosols in e-cigarettes can cause various negative health impacts, investigation is necessary to understand the long-term health impacts of e-cigarettes.

Section 3 – E-Cigarettes as a Cessation Tool

Some people are quitting conventional cigarette smoking using e-cigarette products. However, there is no conclusive evidence that shows e-cigarettes is an effective means for long-term cessation of cigarette smoking (Caraballo et al., 2017). Generally, longitudinal studies are best used to study the impact of long-term use and health effects of consumer products. E-cigarettes are generally new to the market, thus it will take decades to complete these long-term studies (U.S. Department of Health and Human Services,2016). It is also hard to determine cessation effectiveness due to the evolving landscape of e-cigarette products. There are countless variations of e-cigarette products available, in addition to future products. Given experiences with conventional cigarettes, long-term studies will be needed to identify the full health consequences of using e-cigarettes (U.S. Department of Health and Human Services, 2016).

3.1 – Using E-Cigarettes as a Cessation Tool

If a non-pregnant adult smoker uses e-cigarettes to transition completely from combustible cigarettes, there is a potential beneficial impact on health. Among adult non-pregnant conventional cigarette smokers, e-cigarettes have shown to be significantly less harmful than conventional cigarettes (U.S. Department of Health and Human Services, 2016). But, less harmful does not mean harmless (U.S. Department of Health and Human Services, 2016). Research finds that the majority (60%) of smokers are dual using (Hartmann-Boyce et al., 2016). Dual use occurs when an individual decreases the usage of

conventional cigarettes by adding another tobacco product (CDCa, 2017). Most adult e-cigarette users do not stop smoking cigarettes, but instead utilize both products (CDCb, 2017).

The long-term safety of e-cigarettes is unknown. In some studies, reductions in biomarkers (a measurable substance in an organism whose presence is indicative of some phenomenon such as disease, infection, or environmental exposure) were observed in conventional cigarette smokers who switched to e-cigarettes consistent with reductions seen in smoking cessation (Hartmann-Boyce et al., 2016). No current studies have detected serious adverse events related to e-cigarette use. The most commonly reported adverse effects were irritation of the mouth and throat (Hartmann-Boyce et al., 2016).

Smoking fewer cigarettes a day in correlation with using other tobacco products can still be harmful. Heavy smokers who reduce their cigarette use by half still have a very high risk for early death. On average, smokers die 10 years earlier than nonsmokers (CDCa, 2017). The earlier you quit entirely, the lower your risk for early death. Social smokers, people who do not smoke cigarettes on a daily basis but who smoke in certain social situations on a regular basis, can still cause harm to their cardiovascular system. Social smokers have similar blood pressure and cholesterol levels of people who smoke regularly (CDCa, 2017). When you quit smoking completely, you begin to reduce your heart disease risk right away. Health risks are cut in half one year after quitting and continue to drop over time (CDCa, 2017). Using approved quitting methods, such as medications and counseling, can double your chances for success.

3.2 – Evidence-Based Cessation Treatments

Evidence-based cessation treatments that have shown be effective in helping individuals quit tobacco include individual, group, and telephone counseling, as well as seven Food and Drug Administration- (FDA) approved medications. Medications and counseling have been shown to be even more effective when used simultaneously (Fiore, et al., 2008; American Lung Association, 2010). Individuals wanting to quit tobacco should be encouraged, but not required, to combine the use of counseling and medication, as not everyone responds similarly to cessation treatment.

FDA-Approved Cessation Medications

There are 7 approved FDA cessation medications. Five forms are nicotine replacement therapy (NRT) which include: nicotine gum, nicotine inhaler, nicotine lozenges, nicotine nasal spray, and nicotine patch (Fiore et al., 2008). In addition, there are two non-NRT medications: bupropion (Zyban, Wellbutrin) and varenicline (Chantix) (Fiore et al., 2008).

Individual, Group and Telephone Counseling

Evidence-based research supports the effectiveness of individual, group, and telephone counseling as a cessation treatment (Campaign for Tobacco-Free Kids, 2012). Treatment effectiveness increases with intensity (American Lung Association, 2010). Effective cessation counseling incorporates social support and addresses practical coping and problem solving skills (American Lung Association, 2010).

State Quitline Services (1-800-QUIT-NOW)

Tobacco cessation quitlines are considered to be an effective approach to cessation (Lemaire, Bailey, & Leischow, 2015). Quitlines comply with U.S. Public Health Services Clinical Guidelines and offer counseling, medications, information and other support to help tobacco users quit (Lemaire, Bailey, & Leischow, 2015). Quitline counseling has been effective in diverse populations and has been shown to broaden the reach (Fiore, et al., 2008; American Lung Association, 2010; CDC, 2015). In a given year, the Louisiana State

Quitline serves up to 20,000 tobacco users. More information about the Louisiana Quitline can be found on www.quitwithusla.org.

Youth Cessation Treatments

Counseling is the only recommended intervention for youth cessation. Behavioral interventions have been shown to increase the chances of achieving successful cessation among youth (Curry, Mermelstein, & Sporer, 2009). These interventions can take form using various interfaces and platforms, including social media and web. Currently, there are various smart phone applications, text message programs, accountability blogs, even online live counseling, available to promote and guide youth to cessation.

The medications and/or pharmacological treatments (including NRTs) mentioned above are not approved cessation treatments for youth. Currently, there is insufficient evidence for the effectiveness of such treatments among youth smokers (Curry, Mermelstein, & Sporer, 2009).

3.3 – Summary

E-cigarettes are complicated. There is evidence that supports that if a non-pregnant adult smoker completely transitions from conventional cigarettes to e-cigarettes, it reduces overall tobacco-related harm (Bhatnagar, et al.,2014; U.S. Department of Health and Human Services, 2016). Some individuals are quitting conventional cigarette smoking using e-cigarette products. However, data also shows that dual usage (the use of conventional cigarettes and e-cigarettes) is a common practice.

There are several evidence-based, FDA-approved cessation treatments that have shown be effective in helping individuals quit tobacco. Currently, the U.S. Preventive Services Task Force (USPSTF), the group of health experts that determines recommendations for preventive health care, concluded that the evidence is insufficient to recommend e-cigarettes as a cessation aid in adults, including pregnant women.

Overall, there is not enough evidence to conclude the long-term effects of e-cigarettes on cessation.

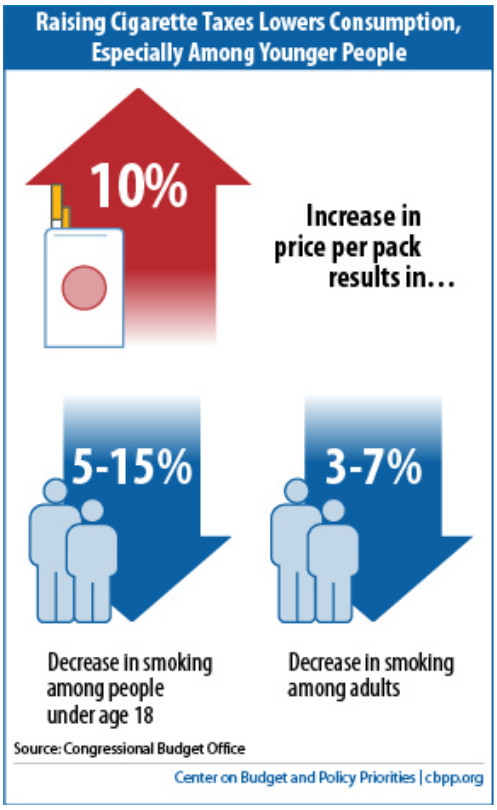
Section 4 – Taxation of E-Cigarette Products

4.1 – Taxation of Tobacco Products

Tobacco was one of the earliest consumer products to be taxed by the federal government, and since the Civil War, it has been established as part of the federal tax system (Health Affairs, 2016). Tobacco taxes have been used to achieve the dual goals of life saving and revenue production in governments. Tobacco taxes have also been justified by economists to help fund smoking prevention and other public health programs (Tax Foundation, 2016).

As seen in Figure 4.1.1, tobacco taxes reduce smoking prevalence (Marr, C. & Huang, C. 2014). Every 10% increase in the price per pack of cigarettes results in a decrease in smoking among youth and adults.

Figure 4.1.1: Raising Cigarette Taxes Lowers Consumption, Especially Among Younger People



Source: Marr, C. & Huang, C. 2014

The Institute of Medicine's (IOM) 2007 report recommends as a best practice for reducing tobacco use the two principles of implementation and regulation through a "two pronged" strategy for comprehensive tobacco control (SGR, 2016):

1) full implementation of clean air laws, taxation, and counter marketing campaigns
2) strong federal regulation of tobacco products and their marketing and distribution

The U.S. Food and Drug Administration (FDA) finalized a rule on August 8, 2016, to provide regulatory authority over all tobacco products including e-cigarettes, cigars, hookah, and pipe tobacco (FDAb, 2016). A precursor to this ruling was the 2009 Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act), which gave the FDA the authority to regulate the manufacture, distribution, and marketing of tobacco products. The Act also restricts tobacco marketing and sales to youth and mandates ingredient disclosure and warning labels on smokeless tobacco, among other things (FDAc, 2017).

Classification of E-Cigarettes for Taxation

In order to determine how to tax e-cigarettes, states must first determine how to classify them. Most states classify e-cigarettes as a tobacco product. Kansas is the only state that does not define e-cigarettes as a tobacco product, but rather defines it as its own product class (Public Health Law Center, 2017). Some states have chosen to specifically call out electronic nicotine delivery systems in their tax laws, calling them vapor products or electronic cigarettes. Because of the defining complexities and continually

evolving nature of tobacco products, the methodology and levels of taxation vary drastically among the eight states currently taxing e-cigarettes. (See Section 4.3.)

Tobacco products are often classified as combustible and noncombustible in tax laws. This classification exists only for taxation purposes. Combustible tobacco products are those that are designed to be ignited and burned in order to produce smoke. Examples include, but are not limited to, conventional cigarettes, cigars, shisha, water pipes, and beedis. Hookah, shisha, water pipes or any instrument used for vaping and smoking flavored tobacco are unique forms of combustible products because they pass through a water basin before inhalation (CDCb 2017). Noncombustible products include smokeless tobacco products. Thus includes chewing tobacco or snuf, as well as newly developed products that are battery operated or electronic in nature, and are designed to deliver an inhaled dose of nicotine or other substances. For a comprehensive list of combustible versus noncombustible tobacco products, see Appendix A.

4.2 – Methods of Taxation

Because so much is still unknown about the health impacts of e-cigarettes and their potential future use as a cessation device, there is currently no guidance as to best practices for e-cigarette taxation. Generally, there are two basic ways to tax tobacco products – a specific tax or an ad valorem tax. Most state excise taxes on products such as alcohol, combustible tobacco products, and gasoline are levied as a "specific tax," or a tax based on volume. Some states have chosen to tax tobacco products such as e-cigarettes on an ad valoreum basis, meaning a percentage of the sale price of the product rather than the specific tax (Tax Foundation, 2016).

The specific tax method avoids discriminating between disposable and reusable products and does not negatively impact lower-income cigarette smokers who may want to switch to e-cigarettes. Regarding this, the Tax Foundation states, "whether intentionally or not, using ad valorem taxes on e-cigarette products results in disparate tax treatment of these products. Some e-cigarette products are single-use, while others are rechargeable and refillable. An ad valorem tax hits disposable e-cigarettes harder than a specific tax, since disposables include the value of the plastic device itself, not just the e-fluid, in its sale price. Because single-use e-cigarettes do not require the prior purchase of a personal vaporizer device, they may be favored by lower-income smokers, upon whom the comparably higher tax could fall disproportionately. Moreover, for either type of device, high taxes may prove prohibitive for low-income smokers wishing to transition away from traditional cigarettes." (Tax Foundation, 2016).

A majority of states' e-cigarette products tax is on a specified amount per milliliter (ml) of product (specific tax) rather than a percentage of the wholesale or retail cost (ad valoreum).

4.3 – Taxation of E-Cigarettes in the United States

As there is still a substantial amount of research taking place to determine the health costs of e-cigarette products, there has not been much guidance regarding how to tax them. The FDA's findings and guidance on the relative risks of e-cigarette products and new products that enter the market will, in many ways, inform the state legislative process on taxing. Legislators must determine how e-cigarette products should be classified and whether they should be taxed. States which have levied special taxes on e-cigarette products to date have relied on distinctive plan rationales and executed different methods of taxation (Tax Foundation, 2016).

As of September 30, 2017, eight states have passed legislation that requires a tax on e-cigarette products: California, Kansas, Louisiana, Minnesota, North Carolina, Pennsylvania, West Virginia and Delaware. The

District of Columbia has also passed an e-cigarette products tax. Delaware's tax will not take effect until January 1, 2018. Kansas, Louisiana, North Carolina, West Virginia and Delaware tax e-cigarette products per milliliter of e-liquid. California, Minnesota, Pennsylvania and the District of Columbia tax e-cigarette products on a percentage of a specified cost. Figure 4.3.1 below shows the historical e-cigarette products tax implementation by state.

Figure 4.3.1: Historical E-Cigarette Products Tax Implementation by State

State	E-Cigarettes Products Tax (effective date; tax rate)
California	4/1/2017; 27.3% retail price 7/1/2017; 65.08% retail price
Kansas	7/1/2016; $0.20 per milliliter of e-liquid 7/1/2017; $0.05 per milliliter of e-liquid
Louisiana	8/1/2015; $0.05 per milliliter of e-liquid
Minnesota	70% wholesale price 7/1/2013; 95% wholesale price
North Carolina	6/1/2015; $0.05 per milliliter of e-liquid
Pennsylvania	10/1/2016; 40% of the purchase price from the wholesaler
West Virginia	7/1/2016; $0.075 per milliliter of e-liquid
Delaware	1/1/2018; $0.05 per milliliter of e-liquid
District of Columbia	10/1/2015; 67% wholesale sales price 10/1/2016; 65% wholesale sales price

Sources: Centers for Disease Control and Prevention (2017). STATE System E-Cigarette Fact Sheet. [online] Available at: https://data.cdc.gov/download/qte6-7jwd/application/pdf; Louisiana Department of Revenue

Washington and Minnesota charge the highest excise tax at 95% of wholesale price; Louisiana, North Carolina, Kansas and Delaware charge the lowest excise tax at $0.05/ml. On July 1, 2017, the state of Kansas decreased their tax rates from $0.20/ml to $0.05/ml of consumable material (Kansas Department of Revenue, 2017). In the summer of 2017, California decided to follow Minnesota and the District of Columbia's pursuit of a higher percentage wholesale/retail price tax on e-cigarette products (California State Board of Equalization-d, 2017).

According to the Tax Foundation, Kansas and Louisiana imposed a tax on e-cigarette products at five cents per milliliter to help close budget shortfalls. In 2015, Kansas faced a deficit of nearly $600 million and Louisiana faced a deficit of $1.6 billion (Tax Foundation, 2016).

Minnesota, the first state to tax e-cigarette products, imposed the tax at a rate of 70% of the wholesale price. On October 22, 2012, the state's Department of Revenue issued a revenue notice stating that because electronic cigarettes are a "product containing, made, or derived from tobacco" and intended for consumption, they fell under the definition of "other tobacco products." As a result, they are now taxed

at the rate of 95% of the wholesale price. Minnesota, in addition to being the first state to tax e-cigarette products, is also the only state to do so administratively rather than legislatively (Minnesota Department of Revenue, 2017) (Tax Foundation, 2016).

State by State Taxation Analysis

The seven states who currently tax e-cigarettes were sent a Request for Information by LDR regarding the collection of this tax for the purposes of this report. See Appendix B for LDR's Request for Information sent to each state. Below is a summary of relevant information from the responses that were received. Delaware is not included below because their e-cigarette products tax legislation was not passed until after responses were collected.

California

California does not collect separate data on the e-cigarette tax. E-cigarette products containing nicotine were just recently included in the definition of "other tobacco products" (and taxed as such) per Proposition 56 in November 2016. The current tax rate of 65.08% of the retail price of the product did not go into effect until July 1, 2017. Based on cash receipts for total "other tobacco products" thus far, California is assuming the taxation of e- cigarettes will generate about $32 million in tax revenue in the 2017-18 fiscal year, out of total cigarette and other tobacco product revenue of about $2.1 billion. See Appendix C for a full text response from California.

Kansas

Kansas has collected approximately $140,000 since the $.05 per milliliter tax went into effect on July 1, 2017. See Appendix D for a full text response from Kansas.

North Carolina

North Carolina has collected approximately $7,730,943.95 since July 2015. See Appendix E for a full text response from North Carolina. North Carolina also provided an in-depth analysis of e-cigarette tax collections by month from July 2015 to September 2017. See Appendix F for details.

Minnesota

Minnesota began taxing e-cigarettes in October of 2012 when it was determined that they meet the definition of a tobacco product (found in Minnesota Statutes, section 297F.01, subdivision 19) and are therefore subject to the Tobacco Tax, which is currently 95% of the wholesale cost of any product derived from tobacco. Minnesota has collected approximately $21,200,000 since fiscal year 2014. See Appendix G for a full text response from Minnesota. Appendix H includes an in-depth tax collection analysis from Fiscal Year 2014 through Fiscal Year 2017 for Minnesota.

Pennsylvania

Pennsylvania began taxing e-cigarettes in October 2016 with the passage of Act 84. This Act created a tax on other tobacco products that included e-cigarettes and set the tax on e-cigarettes and the liquid substances to be used with them at 40% of the purchase price from the wholesaler. While the tax went into effect in October 2016, the first returns were not due until January 20, 2017, and contained three months of collections. In all, Pennsylvania has collected revenue of $17,000,000. See Appendix I for a full text response from Pennsylvania. Appendix J includes an in-depth tax collection analysis from January 2017 through September 2017 for Pennsylvania.

West Virginia

West Virginia Code §11-17-4b of the Tobacco Products Excise Tax Act covers electronic cigarette liquids. This excise tax is $0.075 per milliliter of liquid, regardless of content. Wholesalers are responsible for this tax, but retailers and individuals assume the responsibility when applicable. The effective start date was July 1, 2016. West Virginia has collected approximately $1,601,000 since inception. See Appendix K for a full text response from West Virginia.

4.4 – Taxation of E-Cigarettes in Louisiana

Excise taxes make up approximately 3% of the federal budget and on average about 2% of state budgets (Tax Foundation, 2016). Louisiana Revised Statute 47:854(A) provides that "it is the intent and purpose of the Tobacco Tax Law to levy an excise tax on products as defined that are sold, used, consumed, handled or distributed in the state and to collect the tax from the dealer" (LA RS 47:854, 2015). Louisiana excise taxes include taxes on tobacco products for any person who manufactures or imports cigars, cigarettes, smoking or smokeless tobacco for distribution, sale, use, or consumption (LDRb, 2017).

Louisiana began taxing electronic cigarettes on August 1, 2015 with the passage of Act 94 in the 2015 Regular Session. Act 94 amended Louisiana Revised Statute 47:841 and set the rate of taxation, defined e-cigarettes, and established the Tobacco Regulation Enforcement Fund.

Rate of Taxation

The rate of taxation for e-cigarettes was set at $.05 per milliliter of e-liquid or consumable nicotine liquid solution or other material containing nicotine that is depleted as a vapor product is used(Louisiana State Legislature, 2015).

Definition of E-Cigarettes

E-cigarettes are defined in the definition of vapor products at La. R.S. 47:842(20) in Act 94 as "any noncombustible product containing nicotine or other substances that employ a heating element, power source, electronic circuit, or other electronic, chemical or mechanical means, regardless of shape or size, used to produce vapor from nicotine in a solution or other form." These products include "any electronic cigarette, electronic cigar, electronic cigarillo, electronic pipe, or similar product or device and any vapor cartridge or other container of nicotine in a solution or other form that is intended to be used with or in an electronic cigarette, electronic cigar, electronic cigarillo, electronic pipe, or similar product or device" (Louisiana State Legislature, 2015).

Tobacco Regulation Enforcement Fund

The Tobacco Regulation Enforcement Fund was created from Act 94 as a special fund to provide support to the Office of Alcohol and Tobacco Control (ATC) for the purposes of tobacco regulation enforcement. The fund is sourced from a portion of the revenue from the state tax on cigarettes (Louisiana State Legislature, 2015).

Tax Collection Process

Payment of Taxes

Regarding which entities are responsible for payment of the tax, Revenue Information Bulletin No. 15-032 states, "…the tax is due from the dealer who first sells, uses, consumes, handles or distributes the product

in the state of Louisiana. For traditional tobacco products, that is usually the wholesaler, but in some instances, it can be the manufacturer or the retail dealer receiving the product who is responsible for remitting tax." (LDRa, 2017). If vapor products are received from someone other than a Louisiana Authorized Tobacco Wholesaler, the purchaser is responsible for the tax.

Role of the Louisiana Department of Revenue

Pursuant to La. R.S. 47:841(F), LDR collects the tax on electronic cigarettes from wholesale dealers and retail dealers. Wholesale dealers file the Tobacco Tax Return (R-5604) monthly and indicate the amount of tax due for electronic cigarettes sold per month. Retail dealers file the Tobacco Tax Return for Retail Dealers of Vapor Products (R-5608) to indicate the amount of tax due for electronic cigarettes sold per month. The returns are due on or before the 20th day of the month following the taxable period. Individual consumers who have purchased non-tax paid product through mail or the internet file the Consumer Excise Tax Return (R-5629) to indicate the amount of tax due for E-cigs purchased per month. The funds collected for the tax on electronic cigarettes are not statutorily dedicated like the funds collected for the tax on cigarettes. Therefore, the funds are placed into the General Fund.

Role of the Office of Alcohol and Tobacco Control

The role of the Office of Alcohol and Tobacco Control (ATC) includes issuing permits to entities selling tobacco products and enforcement activities.

Louisiana Revised Statute Title 46, Section 906 provides that:

> Every person who sells or is about to engage in a business of selling at retail, at wholesale, or by vending machine, or is about to engage in the business of receiving stamped or non-tax paid cigarettes, cigars or other tobacco products (emphasis added), or any or all of the articles taxed in accordance with Title 47 of the Louisiana Revised Statutes of 1950 shall first apply for and obtain a permit from the office (ATC).

A wholesale dealer needs a permit for each wholesale place of business operated by the wholesale dealer, and the wholesale permit fee is $75 per year. Retail dealers need a permit for each retail outlet, and the retail permit fee is $25 per year. Retail dealers also need to be registered with the LDR for the purpose of remitting sales tax on retail transactions.

The listing of Louisiana authorized tobacco wholesalers and retailers is collected and maintained by the ATC (LDRb, 2017).

There are four types of permits: Retail, Stamping Agent, Vending Machine and Wholesaler. The permit is issued once the application is received, general requirements are verified, and an inspection is conducted.

The ATC is a division of LDR and assists LDR in tax collection efforts by: 1) ensuring tobacco products are stamped (which indicates taxes have been paid in advance as required by law), 2) conducting tax collection hearings for permit holders which are delinquent in paying taxes, and 3) conducting routine inspections to ensure general requirements are followed.

The ATC's enforcement efforts are focused on the following tasks as it relates to tobacco sales: inspections, audits, compliance checks, complaint investigations and general investigations.

Inspections

Every permitted location is inspected by a uniformed agent yearly for general requirements. Inspections are unannounced. Agents utilize a checklist which is designed to ensure that general requirements confirmed in the initial inspection are still being met. Additionally, agents are trained to observe, document and cite any practice, situation or observation which is inconsistent with state law or otherwise against the interest of public health and/or safety.

Audits

Audits are conducted less frequently and usually are associated with an investigation. While inspections are focused on general requirements, an ATC audit is a review of the permit holder's financial and tax records.

Compliance Checks

Compliance checks are mini operations run by ATC agents to ensure that permit holders are not selling tobacco products to under-aged patrons. The ATC maintains a roster of paid operatives and witnesses. The team, comprised of an agent, a witness and an operative, typically visits permitted locations and simply documents attempted purchases by the operative. Locations which check ID and turn away the operative are sometimes issued a compliance certificate. If a sale occurs, the agent writes a citation.

Complaint and General Investigations

An ATC investigation takes place in two forms.

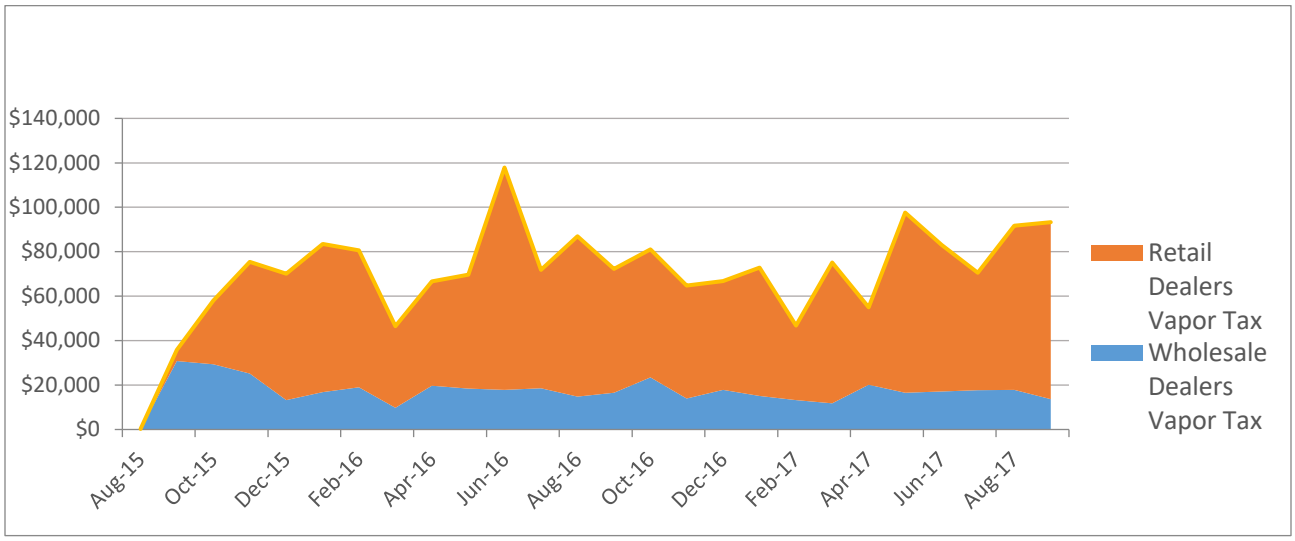
Complaint Investigation: The ATC investigates 100% of the complaints it receives no matter how the complaint is made and whether or not the complaint is anonymous. The agency maintains a log which documents when the complaint was received, what agent was assigned the investigation, and what the resolution was.

General Enforcement: Title 26 provides that a permit holder must abide by all federal, state and local laws in order to remain compliant and in good standing. Often during the normal course and scope enforcement/regulation, there is evidence of illegal activity. ATC agents will typically investigate the activity internally. However, the agency often partners with other local, state and federal law enforcement agencies depending on what illegal activity is suspected.

Tax Revenue

Figure 4.4.1 below shows the combined tax revenue from wholesale and retail dealers of e-cigarettes in Louisiana from August 2015 to September 2017. In the first full year of collections, 2016, the e-cigarette products tax yielded $908,475.46. A total of $1,834,098.11 has been collected from the inception of the tax in August 2015 through September 2017. See Appendix L for a list of Louisiana's e-cigarette tax collection by month from August 2015 to September 2017.

Figure 4.4.1: Combined wholesale and retail dealers' collections for electronic cigarette products in Louisiana from August 2015 to September 2017.



Source: Louisiana Department of Revenue

4.5 – Taxation of E-Cigarettes Challenges

The seven states who currently tax electronic cigarette products were sent a Request for Information by LDR regarding the challenges they have incurred from taxation and regulation of e-cigarette products collection of this tax for the purposes of this report, available in Appendix M. Responses were received from five states. Below is a summary of relevant information from the responses that were received.

California

In reaction to the passage of California Proposition 56 in November 2016, which made products containing nicotine a tobacco product, the California Department of Tax and Fee Administration provided special notices to prepare their state for the change. In realizing that many of the California retailers of these electronic cigarette (vape) products would also be classified as manufacturers under the California tobacco products tax and licensing laws, the agency recently adopted Cigarette and Tobacco Products Regulation 4076 (California State Board of Equalization-b, 2017). Regulation 4076 provides requirements for determining the wholesale cost subject to the tobacco products excise tax for transactions in which the manufacturer is also the distributor, along with transactions between related parties. The Investigations Division investigators make random visits to retailers that sell e-cigarette (vape) products, but these visits have been more about providing information to these retailers rather than issuing citations for violations, which may happen in subsequent follow-up inspections. See Appendix N for a full text response regarding taxation challenges from California.

Kansas

According to Kansas, implementation was an arduous process. The Kansas Legislature originally approved measures to begin taxation in 2014. The Department of Revenue requested the Legislature to delay the implementation date to January 1, 2017. In 2016, the Department met with numerous industry representatives to negotiate regulations that would be the backbone of the law. Unfortunately, that

process got bogged down due to industry resistance to some of the definitions the Department was proposing, and the Department was unable to get regulations passed by January 1, 2017. During the 2017 Legislative Session, the Department worked with industry representatives and got a bill passed that clarified the statutory definition for consumable material. The definition for consumable material was the biggest area of concern for industry. The electronic cigarettes tax went into effect on July 1, 2017. See Appendix O for a full text response regarding taxation challenges from Kansas.

Minnesota

One of the challenges faced by Minnesota is that the tobacco tax statute does not provide clear guidance on e-cigarette products. The current excise tobacco statute provides inconsistent treatment of similarly situated e-cigarette products. E-cigarette products are currently taxed at the tobacco excise tax rate of the 95% of the wholesale cost. In many circumstances this tax assessment is made only on the nicotine solution itself, rather than on the sale of the final consumable product. Meanwhile e-cigarette products that are in a consumable form when brought into Minnesota are taxed at the same 95% rate but on a much higher value. This results in a significant tax discrepancy for two very similar products: artificially low tobacco taxes on e-cigarette products when the final (often flavored) solution is mixed in Minnesota, as is most often the case for vapor shops; high tobacco taxes for similar products that are shipped into Minnesota in their final consumable form. During the 2017 legislative session, a bill was proposed that would have modified the tobacco tax statute to standardize how e-cigarette products are taxed in Minnesota. However, the proposal did not advance. See Appendix P for a full text response regarding taxation challenges from Minnesota.

Pennsylvania

From a policy perspective, Pennsylvania has received pushback from the independent vaping lobby who wants a per milliliter tax at the retail level (as opposed to the current 40% tax at the wholesale level). They have introduced language to change the tax structure, but so far nothing has passed.

Pennsylvania's Bureau of Trust Fund Taxes adds: "Out of state companies are a problem for both the enforcement and administrating aspect. Enforcement does not have the means to visit out-of-state companies, especially those across the country, and therefore reporting and taxation do not happen. A high call volume of complaints was received about the high tax rate and the type of products taxed. This also made businesses refuse to collect and remit tax [sic]. In addition, complaints were received from small and large companies stating that they do not have the system capabilities to produce all of the required reporting information that was requested in the law." See Appendix Q for a full text response regarding taxation challenges from Pennsylvania.

West Virginia

West Virginia had two initial challenges, which they continue to experience. One was getting all of the proper entities to register and file. The other was getting the proper entities to file and pay correctly. If a retailer had floor stock, they could deplete it without paying the tax, but all of their purchases beginning July 1, 2016, were subject to the tax. All of the wholesalers, and online retailers, were responsible for the tax with their first sale beginning July 1, 2016.

Some West Virginia manufacturers created an exorbitant amount of liquids prior to the effective date, hoping to delay the tax payments. If they manufactured the products and only sold retail, that was fine. West Virginia administrators had a problem with the manufacturers selling wholesale and retail. The wholesalers incorrectly thought selling wholesale, not just retail, from their floor stock was exempt. See Appendix R for a full text response regarding taxation challenges from West Virginia.

Louisiana

For the purposes of this report, the Office of Alcohol and Tobacco Control and the Louisiana Department of Revenue were asked to provide organizational challenges incurred from the taxation and regulation of e-cigarette and e-cigarette products in Louisiana. What follows are their responses.

Office of Alcohol and Tobacco Control

There are several challenges posed by the regulation and taxation of electronic cigarettes and e-cigarette products. Currently, vapor and e-cigarette products are not entirely distributed through licensed wholesalers as other tobacco products are. There is no tax stamp purchased in advance and required to be affixed to the product itself. Thus, it is more challenging to monitor the distribution and tax collection efforts. Additionally, there are safety and legal questions and issues involved as it relates to adulterated products. Many of the products sold can contain additives which are added at the retail level with no supervision or control. Finally, any attempt to apply the existing tobacco distribution model to these new products will be met by some resistance from wholesalers. Wholesale operations in most cases are automated and designed to sort and ship product packaged in standard established sizes. Without standardizing packaging, wholesalers would have to manually handle the product or invest in new or adapted automated processes and both options could be expensive.

The Louisiana Department of Revenue

LDR encountered some challenges in taxing e-cigarette products. The challenges included lack of staff, educating the staff and potential taxpayers, no requirement for vapor retail dealers or vape shops to register with LDR, no requirement for vapor retail dealers or vape shops to provide a bond, and inability to identify vape shops.

4.6 – Taxation of E-Cigarettes Recommendations

According to the CDC, interventions within an evidence-based comprehensive tobacco control program include raising tobacco taxes, implementing comprehensive smoke-free laws, funding mass-media campaigns, and making cessation services accessible to all. These interventions have been shown to reduce youth initiation, tobacco-related disease and death, and tobacco-related healthcare costs and lost productivity.

The ATC and LDR were asked to provide organizational recommendations for the taxation and regulation of e-cigarette products in Louisiana. Below are their responses.

The Office of Alcohol and Tobacco Control did not feel that they were in a position to provide recommendations at the moment.

The Louisiana Department of Revenue stated:

Less than 100 vapor retail dealers and vape shops are filing the monthly tobacco tax return. Therefore, we recommend statutorily requiring vapor retail dealers and vape shops to register with the Department of Revenue and provide a bond, which can be applied towards an outstanding tax liability. In addition, we recommend a penalty for vapor retail dealers and vape shops engaging in business without a license from the Department of Revenue, Office of Alcohol and Tobacco Control.

Section 5 – Conclusion

In summary, there is limited research on the long-term effects of e-cigarettes and the evaluation of e-cigarette taxation policies. Therefore, research and recommendations regarding best practices in these areas are limited.

Though the long-term health impacts of e-cigarettes are unknown, the known harmful effects of nicotine and the other damaging ingredients in e-cigarettes can be detrimental to youth and young adults. Evidence shows that in youth and young adults, there is an association between e-cigarette use and conventional smoking, or dual usage (U.S. Department of Health and Human Services, 2016). In addition, e-cigarettes may potentially gateway youth and young adults to smoking conventional cigarettes.

Conversely, among non-pregnant adult conventional smokers, there is evidence that suggests transitioning completely to e-cigarettes may reduce overall tobacco-related harm. However, data shows that dual usage (the use of conventional cigarettes and e-cigarettes) is a common practice.

Some people are quitting conventional cigarette smoking using e-cigarette products. However, there is no conclusive evidence that shows e-cigarettes is an effective means for long-term cessation of cigarette smoking (Caraballo et al., 2017). Evidence-based cessation treatments that have shown be effective in helping individuals quit tobacco include individual, group, and telephone counseling, as well as seven FDA-approved medications. Louisiana residents trying to quit smoking are encouraged to call 1-800-QUIT-NOW to receive such evidence-based cessation help. Eligible residents are also encouraged to connect with the Smoking Cessation Trust. In addition, residents are reminded to check their health plans for cessation coverage.

Because so much is still unknown about the health impacts of e-cigarettes and their potential future use as a cessation device, there is currently no guidance as to best practices for e-cigarette taxation. Currently, states define what constitutes an e-cigarette product and then determine the method and rate of taxation – a challenging task. As of January 2018, only eight states tax e-cigarette products. Five states issue a specific tax on e-cigarette products. Three states issue an ad valoreum tax on e-cigarette products.

Louisiana issues a specific tax on e-cigarette products at a rate of $0.05 per milliliter of e-liquid, consumable nicotine liquid solution, or other material containing nicotine that is depleted as a vapor product is used. From August 2015 to September 2017, Louisiana collected $1,834,098 in tax e-cigarette products revenue. However, less than 100 e-cigarettes retailers are filing the monthly tobacco tax return. Thus, it is recommended that all e-cigarette retailers be required to register with the Louisiana

Department of Revenue. It is also recommended that a penalty be enforced for retailers that conduct e-cigarette business without registering.

The Louisiana Department of Health's Tobacco Cessation and Prevention program works statewide to provide resources and education on tobacco use, secondhand smoke exposure, and cessation services. Additionally, the program manages the operation of the state's Tobacco Quitline, 1-800-QUIT-NOW. Resources can be found by visiting www.quitwithusla.org or www.wellaheadla.com/Living-Well-Ahead/Geaux-Tobacco-Free.

Bibliography

American Lung Association (ALA). (2010). State cessation coverage 2010, helping smokers quit. American Lung Association. Retrieved from http://www.lung.org/assets/documents/tobacco/helping-smokers-quit2010.pdf

American Society of Addiction Medicine. Public Policy Statement on Nicotine Addiction and Tobacco. Chevy Chase (MD): American Society of Addiction Medicine, 2008 [accessed 2017 Jan 24].

Benowitz NL, Burbank AD. Cardiovascular toxicity of nicotine: Implications for electronic cigarette use. Trends in Cardiovascular Medicine 2016;26(6):515–23.

Bhatnagar, A., Whitsel, L.P., Ribisl, K.M., Bullen, C., Chaloupka, F., Piano, M.R., Robertson, Benowitz, N. (2014). Electronic cigarettes; A policy statement from the American Heart Association. Circulation, 130, 1-19.

Biener, L., & Siegel, M. (2000). Tobacco marketing and adolescent smoking: more support for a causal inference. American Journal of Public Health, 90(3), 407–11.

By the Numbers. (2017). American Lung Association. Retrieved 21 November 2017, from http://www.lung.org/our-initiatives/tobacco/reports-resources/sotc/by-the-numbers/

California State Board of Equalization (a). (2017). *Cigarette and Tobacco Products Tax Rate Increase and New Products Subject to Tax-Special Notice*. [online] Available at: https://www.boe.ca.gov/pdf/l488.pdf [Accessed 10 Nov. 2017].

California State Board of Equalization (b). (2017). *Cigarette and Tobacco Products Tax Regulations - Reg. 4076*. [online] Available at: http://www.boe.ca.gov/lawguides/business/current/btlg/vol3/ctptr/ctptr-reg4076.html [Accessed 14 Nov. 2017].

California State Board of Equalization (c). (2017). *New Licensing Requirements for Manufacturers/Importers, Distributors, and Wholesalers of Nicotine Products Beginning April 1, 2017*. [online] Available at: http://www.boe.ca.gov/pdf/l493.pdf [Accessed 8 Nov. 2017].

California State Board of Equalization (d). (2017). *Tax and Fee Guide for Cigarettes and Tobacco Products*. [online] Available at: https://www.boe.ca.gov/industry/cigarettes_tobacco_products.html [Accessed 20 Nov. 2017].

Campaign for Tobacco-Free Kids (CFTFK). (2012). Tobacco cessation works: An overview of best practices and state experiences. Campaign for Tobacco-Free Kids. Retrieved from https://www.tobaccofreekids.org/research/factsheets/pdf/0245.pdf

Caraballo, R.S., Shafer, P.R., Patel, D., Davis, K.C., & McAfee, T.A. (2017). Quit methods used by US adult cigarette smokers, 2014–2016. Preventing Chronic Disease ,14 (E32), 1-5.

Centers for Disease Control and Prevention (CDC). (2016) Tobacco use among middle and high school students—United States, 2011–2015. Morbidity and Mortality Weekly Report, 65(14), 361–7.

Centers for Disease Control and Prevention. (2015). Best Practices User Guide: Health Equity in Tobacco Prevention and Control. Atlanta: 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.

Centers for Disease Control and Prevention. (CDCa) (2017). *About the Office on Smoking and Health (OSH)*. [online] Available at: https://www.cdc.gov/tobacco/about/osh/index.htm [Accessed 15 Nov. 2017].

Centers for Disease Control and Prevention. (CDCb) (2017). *CDC - Fact Sheet - Hookahs - Smoking & Tobacco Use*. [online] Available at: https://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/hookahs/index.htm [Accessed 13 Nov. 2017].

Centers for Disease Control and Prevention. National Youth Tobacco Survey, 2014-2015. Retrieved from https://www.cdc.gov/tobacco/data_statistics/surveys/nyts/index.htm

Chen C, Zhuang YL, Zhu SH. E-cigarette design preference and smoking cessation: A U.S. population study. American Journal of Preventive Medicine 2016, 51 (3), 356-363. [DOI: 10.1016/j.amepre.2016.02.002]

Curry, S. J., Mermelstein, R. J., & Sporer, A. K. (2009). Therapy for Specific Problems: Youth Tobacco Cessation. Annual Review of Psychology, 60, 229–255.

Czogala J, Goniewicz ML, Fidelus B, Zielinska-Danch W, Travers MJ, Sobczak A. Secondhand exposure to vapors from electronic cigarettes. Nicotine & Tobacco Research 2014;16(6):655–62.

Dawkins L, Turner J, Crowe E. Nicotine derived from the electronic cigarette improves time-based prospective memory in abstinent smokers. Psychopharmacology 2013; 227(3):377–84.

Dual use of tobacco products. (2017). Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. Retrieved from: https://www.cdc.gov/tobacco/campaign/tips/diseases/dual-tobacco-use.html

Duke, JC, et al., "Exposure to Electronic Cigarette Television Advertisements Among Youth and Young Adults," Pediatrics 134(1): e29-36, July 2014.

Dutra, L.M., & Glantz, S.A. (2016). E-cigarettes and national adolescent cigarette use: 2004-2014. *Pediatrics,* 139 (2), 1-9.

Electronic Cigarettes an Overview of Key Issues. (2015). *Campaign for Tobacco Free Kids*. Retrieved 21 November 2017, from https://www.tobaccofreekids.org/assets/factsheets/0231.pdf

Electronic cigarettes and youth. (2017). Campaign for Tobacco-Free Kids. Retrieved from https://www.tobaccofreekids.org/assets/factsheets/0382.pdf

Family Smoking Prevention and Tobacco Control Act | NIH Office of Disease Prevention (ODP). (2017). National Institutes of Health (NIH). Retrieved 21 November 2017, from https://prevention.nih.gov/tobacco-regulatory-science-program/about-the-FSPTCA

Farsalinos KE, Polosa R. Safety evaluation and risk assessment of electronic cigarettes as tobacco cigarette substitutes: a systematic review. Therapeutic Advances in Drug Safety 2014;5(2):67–86.

Fiore MC, Jaen CR, Baker TB, et al. (2008). Treating Tobacco Use and Dependence: 2008 Update. Clinical practice guideline. Rockville, MD: Centers for Disease Control and Prevention, US Department of Health and Human Services. Retrieved from: http://www.ahrq.gov/professionals/clinicians-providers/guidelinesrecommendations/tobacco/index.html#Clinic A

Flavoring Chemicals in E-Cigarettes: Diacetyl, 2,3-Pentanedione, and Acetoin in a Sample of 51 1 Products, Including Fruit-, Candy-, and Cocktail-Flavored E-Cigarettes. Joseph G. Allen, Skye S. Flanigan, Mallory LeBlanc, Jose Vallarino, Piers MacNaughton, James H. Stewart, David C. Christiani, Environmental Health Perspectives, December 8, 2015, doi: 10.1289/ehp.1510185

Flouris AD, Chorti MS, Poulianiti KP, Jamurtas AZ, Kostikas K, Tzatzarakis MN, Wallace Hayes A, Tsatsakis AM, Koutedakis Y. Acute impact of active and passive electronic cigarette smoking on serum cotinine and lung function. Inhalation Toxicology 2013;25(2):91–101.

Frequently Asked Questions. (2017). *Louisiana Department of Revenue*. Retrieved 14 November 2017, from http://www.revenue.louisiana.gov/Faq/QuestionsAndAnswers/54

Gilbert AH U.S. Patent No. 3,200,819. (1965). Brown & Williamson Collection. Bates No. 570328916-570328920. Retrieved from http://industrydocuments.library.ucsf.edu/tobacco/docs/hzxb0140.

Grana, R, Benowitz, N, & Glantz, S. (2014). *E-Cigarettes A Scientific Review*. Circulation. 129. 1972-86. 10.1161/CIRCULATIONAHA.114.007667.

Implementing the Tobacco Control Act through Policy, Rulemaking, and Guidance. (2017). U.S Food and Drug Administration (FDA). Retrieved 21 November 2017, from https://www.fda.gov/TobaccoProducts/AboutCTP/ucm383160.htm

Hartmann-Boyce, J., McRobbie, H., Bullen, C., Begh, R., Stead, L.F., & Hajek, P. (2016). Electronic cigarettes for smoking cessation (review). Cochrane Database of Systematic Reviews, 9 (CD010216).

Healthypeople.gov. (2017). *Tobacco Use and Secondhand Smoke Exposure: Interventions to Increase the Unit Price for Tobacco Products | Healthy People 2020*. [online] Available at: https://www.healthypeople.gov/2020/tools-resources/evidence-based-resource/tobacco-use-and-secondhand-smoke-exposure-interventions-increase-unit-price-tobacco-products [Accessed 20 Oct. 2017].

Hitchman, S.C., Brose, L.S., Brown, J., Robson, D., McNeill, A. Associations between e-cigarette type, frequency of use, and quitting smoking: findings from a longitudinal online panel survey in Great Britain. Nicotine and Tobacco Research 2015; 17(10):1187–94.

Hon L. U.S. Patent 8393331 B2 Electronic Atomization Cigarette. (2013). Retrieved from https://docs.google.com/viewer?url=patentimages.storage.googleapis.com/pdfs/US8393331.pdf. Accessed November 1, 2017.

Jamal A, Gentzke A, Hu SS, et al. Tobacco Use Among Middle and High School Students — United States, 2011–2016. MMWR Morb Mortal Wkly Rep 2017; 66:597–603. DOI: http://dx.doi.org/10.15585/mmwr.mm6623a1

Kansas Department of Revenue. (2017). *2017 LEGISLATIVE AMENDMENTS REGARDING CIGARETTES, ELECTRONIC CIGARETTES, CONSUMABLE MATERIAL AND OTHER TOBACCO PRODUCTS*. [online] Available at: https://www.ksrevenue.org/taxnotices/notice17-12.pdf [Accessed 15 Nov. 2017].

Laura, B. (2017). Electronic Cigarettes and Youth. Campaign for Tobacco Free Kids. Retrieved 17 November 2017, from https://www.tobaccofreekids.org/assets/factsheets/0382.pdf

Lee S, Kimm H, Yun JE, Jee SH. Public health challenges of electronic cigarettes in South Korea. Journal of Preventive Medicine and Public Health 2011;44(6):235–41.

Lemaire, R.H., Bailey, L., & Leischow, S. (2015). Meeting the tobacco cessation coverage requirement of the Patient Protection and Affordable Care Act: state smoking cessation quitlines and cost sharing. American Journal of Public Health, 105(S5), S699-S704.

Lempert LK, Grana R, Glantz SA. The importance of product definitions in U.S. e-cigarette laws and regulations. Tobacco Control 2016;25(e1): e44–e51.

Lopez AA, Hiler MM, Soule EK, Ramôa CP, Karaoghlanian NV, Lipato T, Breland AB, Shihadeh AL, Eissenberg T. Effects of electronic cigarette liquid nicotine concentration on plasma nicotine and puff topography in tobacco cigarette smokers: A preliminary report. Nicotine & Tobacco Research 2016;18(5):720–3.

Louisiana Department of Revenue. (LDRa) (2017). *Revenue Information Bulletin NO. 15-032*. [online] Available at: http://revenue.louisiana.gov/LawsPolicies/RIB%2015-032.pdf [Accessed 20 Nov. 2017].

Louisiana Department of Revenue. (LDRb) (2017). *Tobacco Tax*. [online] Available at: https://revenue.louisiana.gov/ExciseTaxes/TobaccoTax [Accessed 15 Nov. 2017].

Louisiana State Legislature. (2015). *House Bill NO. 119*. [online] Available at: https://legis.la.gov/legis/ViewDocument.aspx?d=959263 [Accessed 16 Nov. 2017].

Louisiana Youth Tobacco Survey, 2017. Unpublished. Retrieved from Louisiana Tobacco Control Program.

Marr, C. and Huang, C. (2017). *Higher Tobacco Taxes Can Improve Health and Raise Revenue*. [online] Center on Budget and Policy Priorities. Available at: https://www.cbpp.org/research/higher-tobacco-taxes-can-improve-health-and-raise-revenue [Accessed 14 Nov. 2017].

Minnesota Department of Revenue. (2017). *E-cigarettes*. [online] Available at: http://www.revenue.state.mn.us/businesses/tobacco/Pages/e-Cig.aspx [Accessed 13 Nov. 2017].

National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (CDC*a*). (2017). *Electronic Cigarettes*. https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm.

National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (CDC*b*). (2017). *E-cigarettes Ads and Youth*. https://www.cdc.gov/vitalsigns/ecigarette-ads/index.html.

QuickStats: Cigarette Smoking Status Among Current Adult E-cigarette Users, by Age Group — National Health Interview Survey, United States, 2015. MMWR Morb Mortal Wkly Rep 2016; 65: 1177. DOI: http://dx.doi.org/10.15585/mmwr.mm6542a7.

Popcorn Lung: A Dangerous Risk of Flavored E-Cigarettes. Each Breath: A Blog by the American Lung Association. (2016, August 9). Retrieved January 8, 18, from http://www.lung.org/about-us/blog/2016/07/popcorn-lung-risk-ecigs.html?referrer=https://www.google.com/

Public Health Law Center. (2017). *U.S. E-Cigarette Regulations - 50 State Review* [online] Available at: http://www.publichealthlawcenter.org/resources/us-e-cigarette-regulations-50-state-review

Ramôa CP, Hiler MM, Spindle TR, Lopez AA, Karaoghlanian N, Lipato T, Breland AB, Shihadeh A, Eissenberg T. Electronic cigarette nicotine delivery can exceed that of combustible cigarettes: a preliminary report. Tobacco Control 2016;25(e1): e6–e9.

Remington, P. & Brownson, R. (2011). Fifty Years of Progress in Chronic Disease Epidemiology and Control. MMWR Morb Mortal Wkly Rep 2011.

Richtel M. E-cigarettes, by other names, lure young and worry experts. New York Times, March 4, 2014; accessed: July 27, 2015.

Rosenberg J, Benowitz NL, Jacob P, Wilson KM. Disposition kinetics and effects of intravenous nicotine. Clinical Pharmacology and Therapeutics 1980;28(4):517–22.

RS 47:854. (2015). *Louisiana State Legislature*. Retrieved 16 November 2017, from http://www.legis.la.gov/Legis/Law.aspx?d=102596

Sanford, Z., & Goebel, L. (2014). E-cigarettes: An up to date review and discussion of the controversy. West Virginia Medical Journal, 110 (4), 10–5.

Santanam N, Thornhill BA, Lau JK, Crabtree CM, Cook CR, Brown KC, Dasgupta P. Nicotinic acetylcholine receptor signaling in atherogenesis. Atherosclerosis 2012;225(2):264–73.

Singh T, Arrazola RA, Corey CG, et al. Tobacco Use Among Middle and High School Students — United States, 2011–2015. MMWR Morb Mortal Wkly Rep 2016; 65:361–367. DOI: http://dx.doi.org/10.15585/mmwr.mm6514a1.

Sleiman M, Logue JM, Montesinos VN, Russell ML, Litter MI, Gundel LA, Destaillats H. Emissions from electronic cigarettes: key parameters affecting the release of harmful chemicals. Environmental Science & Technology 2016;50(17):9644–51.

Sleiman, M., Logue, J.M., Montesinos, V.N., Russell, M.L., Litter, M.I., Gundel, L.A., Destaillats, H. Emissions from electronic cigarettes: key parameters affecting the release of harmful chemicals. Environmental Science & Technology 2016;50(17):9644–51.

Spindle TR, Breland AB, Karaoghlanian NV, Shihadeh AL, Eissenberg T. Preliminary results of an examination of electronic cigarette user puff topography: the effect of a mouthpiece-based topography measurement device on plasma nicotine and subjective effects. Nicotine & Tobacco Research 2015;17(2):142–9.

St. Helen G, Havel C, Dempsey D, Jacob P 3rd, Benowitz NL. Nicotine delivery, retention, and pharmacokinetics from various electronic cigarettes. Addiction 2016;111(3):535–44.

Tax Foundation. (2016). *Vapor Products and Tax Policy - Tax Foundation*. [online] Available at: https://taxfoundation.org/vapor-products-and-tax-policy/ [Accessed 25 Oct. 2016].

The Louisiana Office of Alcohol and Tobacco Control. (2017). *Tobacco Applications*. [online] Available at: http://www.atc.rev.state.la.us/tobacco-application-retailer.php [Accessed 15 Nov. 2017].

U.S Department of Health and Human Services. (2016). *E-Cigarette Use Among Youth and Young Adults*. [online] Available at: https://e-cigarettes.surgeongeneral.gov/documents/2016_SGR_Full_Report_non-508.pdf [Accessed 16 Nov. 2017].

U.S Food and Drug Administration (FDAa). (2017). *Cigarettes*. [online] Available at: https://www.fda.gov/TobaccoProducts/Labeling/ProductsIngredientsComponents/ucm482563.htm [Accessed 14 Nov. 2017].

U.S Food and Drug Administration (FDAb). (2016). *The Facts on the FDA's New Tobacco Rule*. [online] Available at: https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm506676.htm [Accessed 16 Nov. 2017].

U.S Food and Drug Administration (FDAc). (2017). *Tobacco Control Act*. [online] Available at: https://www.fda.gov/TobaccoProducts/Labeling/RulesRegulationsGuidance/ucm246129.htm [Accessed 17 Nov. 2017].

U.S. Congress. (2014). Cigarette, e-Cigarette, and other tobacco product advertisements and imagery in magazines with large numbers of teen readers. As cited U.S. Department of Health and Human Services 2016 from: http://democrats.energycommerce.house.gov/sites/default/files/documents/Report-Tobacco-Magazine-Advertising-2014-9-24.pdf.

U.S. Department of Health and Human Services. 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, 2016.

U.S. Department of Health and Human Services. How Tobacco Smoke Causes Disease—The Biology and Behavioral Basis for Smoking-Attributable Disease: 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, 2010.

U.S. Department of Health and Human Services. 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, 2014.

U.S. Department of Health, Education, and Welfare. Smoking and Health. A Report of the Surgeon General. Washington: U.S. Department of Health, Education, and Welfare, Office of the Assistant Secretary for Health, Office on Smoking and Health, 1979. DHEW Publication No. (PHS) 79-50066.

U.S. Food and Drug Administration. (2017). Tobacco Products: *Vapes, E-Cigs, Hookah Pens, and other Electronic Nicotine Delivery Systems (ENDS)*.

https://www.fda.gov/TobaccoProducts/Labeling/ProductsIngredientsComponents/ucm456610.htm

Vansickel AR, Eissenberg T. Electronic cigarettes: effective nicotine delivery after acute administration. Nicotine & Tobacco Research 2013;15(1):267–70.

Appendices

Appendix A
Combustible Versus Noncombustible Tobacco Products

Product	Combustible vs. Noncombustible	Description
Cigarettes	Combustible	A product containing tobacco, chemical additives, a filter, and paper wrapping that is designed to be smoked.
Cigars, cigarillos, and other combustible products	Combustible	Any combustible tobacco product that is designed to be smoked – other than cigarettes – including cigars, cigarillos, little cigars, blunts, and bidis or beedis (small, flavored filterless Indian cigarettes).
E-cigarettes and other electronic nicotine delivery system (ENDS) products	Noncombustible	Electronic and/or battery-operated devices designed to deliver an inhaled dose of nicotine or other substances. Examples include electronic cigarettes (e-cigarettes), electronic cigars, electronic cigarillos, electronic hookah, vaporizers, and vape pens. ENDS does not include any device or medication approved by the government as nicotine replacement therapy.
Hookah, shisha, and water pipes	Combustible	A single or multi-stemmed instrument for vaporizing and smoking flavored tobacco (shisha or sheesha) or other products in which the vapor or smoke is passed through a water basin – often glass-based – before inhalation. Water pipes are known by a variety of names such as hookah, huqqah, nargilah, nargile, arghila, and qalyan.
Loose tobacco leaf	Combustible	Including roll your own (RYO) tobacco for hand rolling cigarettes and pipe tobacco (not including chewing tobacco).
Smokeless tobacco products	Noncombustible	Tobacco products that are used by means other than smoking, such as chewing, sniffing, or placing between the teeth and gum. Examples include chewing tobacco, dipping tobacco, snuf, snus, gutkha or gutka, and dissolvable tobacco products.

Appendix B

Louisiana Department of Revenue's Request for Taxation Information sent to California, Kansas, North Carolina, Minnesota, Pennsylvania, West Virginia and Delaware.

From: research@taxadmin.memberclicks.net [mailto:research@taxadmin.memberclicks.net]
Subject: [Research] Request for Information

Pursuant to La. R.S. 47:841(F) Louisiana imposes a tax on vapor products and electronic cigarettes. The tax is five cents per milliliter of consumable nicotine liquid solution or other material containing nicotine that is depleted as a vapor product is used. We are requesting the following information from the states of California, Kansas, Minnesota, Pennsylvania, West Virginia and North Carolina:

5. How are vapor products and electronic cigarettes tax in your state? Please provide the statute.
6. When did the tax become effective?
7. Has the tax rate increased or decreased?
8. Please provide electronic cigarette collection data since inception of the tax.

This information is needed for a report to the House Committee on Ways and Means and the House Committee on Health and Welfare. Please respond by Wednesday, October 25, 2017. Thanks for your assistance.

Vanessa Caston LaFleur, Esq.
Director | Policy & Legislative Services
Louisiana Department of Revenue
| P.O. Box 44098 | Baton Rouge, LA 70804-4098
| Office: (225) 219-2780 | Fax: (225) 219-2759|
E-mail: Vanessa.LaFleur@la.gov

For immediate assistance, please contact Shannon Thomas at (225) 219-2780.

Appendix C
Response to Request for Tax Information: California

From: Jay Chamberlain <research@taxadmin.memberclicks.net>
Date: October 24, 2017 at 2:42:46 PM CDT
To: <Vanessa.LaFleur@la.gov>

Subject: **[Research] Request for Information**
Reply-To: <research@lists.taxadmin.org>

For California, see answers in red below…

Jay Chamberlain

Chief, Revenue and Taxation Unit

California Department of Finance

From: research@taxadmin.memberclicks.net [mailto:research@taxadmin.memberclicks.net]
Sent: Monday, October 23, 2017 9:37 AM
To: Chamberlain, Jay <Jay.Chamberlain@dof.ca.gov>
Subject: [Research] Request for Information

1. How are vapor products and electronic cigarettes tax in your state? Please provide the statute.
   California voters approved Proposition 56 in November of 2016. Proposition 56, in regards to taxation, increased the per-pack excise tax on cigarettes by $2 and added electronic cigarettes to the goods that are considered to be "other tobacco products". "Other tobacco products" are taxed at a rate determined by the California Department of Tax and Fee Administration (CDTFA). Other tobacco products are taxed based on the wholesale cost of cigarettes at a tax rate which is equivalent to the sum of all the tax rates imposed on cigarettes plus an additional 50 cents per pack.

   Prior to Proposition 56, the equivalent tax rate on other tobacco products was $1.37, and during 2016-17, was levied as a 27.3 percent tax on the retail price of the product. Although the rate is equivalent to a specific dollar amount, CDTFA determines the actual percent levy each fiscal year based on current wholesale cigarette price data. With the adoption of Proposition 56, the per-pack tax on cigarettes increased from $0.87 to $2.87. So the equivalent tax on other tobacco products increased from $1.37 to $3.37.

   Based on the new equivalent tax rate of $3.37, as well as current wholesale price data, CDTFA has determined that the 2017-18 fiscal year tax rate on other tobacco products will be 65.08 percent of the retail price of the tobacco product. Sales tax will be levied on top of this. Note that only products sold with actual nicotine liquid are subject to this tax, and the tax is levied on the retail value of the product. Electronic cigarette paraphernalia is not subject to this tax unless it is sold in combination with the nicotine liquid.

   "Electronic cigarettes means any device or delivery system sold in combination with nicotine which can be used to deliver to a person nicotine in aerosolized or vaporized form,…" (California Revenue and Taxation Code, Section 30121, subdivision (c) link here http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=RTC&sectionNum=30121.)

Here is a link to our cigarette tax code http://leginfo.legislature.ca.gov/faces/codes_displayexpandedbranch.xhtml?tocCode=RTC&division=2.&title=&part=13.&chapter=2.&article=
but the electronic cigarette piece can all be found in California Revenue and Taxation Code, Section 20121, subdivision (c).

2. When did the tax become effective?
   Electronic cigarettes became taxable as other tobacco products in November, immediately after the passage of Proposition 56, and were thus subject to the 27.3 percent tax on the retail price of the product for the remainder of the 2016-17 fiscal year. The "other tobacco products" tax rate did not start reflecting the additional $2 rate until July 1, 2017. The 2017-18 rate of 65.08 percent will be effective until the end of the fiscal year (June 30, 2018).

3. Has the tax rate increased or decreased?
   It has increased

4. Please provide electronic cigarette collection data since inception of the tax.
   Unfortunately, we do not collect separate data on electronic cigarette taxes. But, based on the cash receipts for total "other tobacco products" the impact of taxing electronic cigarettes does not appear to have been large. We are assuming that the taxation of electronic cigarettes will generate about $32 million of tax revenue in the 2017-18 fiscal year, out of total cigarette and other tobacco-product revenue of about $2.1 billion.

Appendix D

Response to Request for Tax Information: Kansas

From: Justin Carroll <research@taxadmin.memberclicks.net>
Date: October 24, 2017 at 10:37:03 AM CDT
To: <Vanessa.LaFleur@la.gov>
Subject: **[Research] Request for Information**
Reply-To: <research@lists.taxadmin.org>

KS charges a $.05 per milliliter tax on consumable material for anyone selling or dealing electronic cigarettes in the state. Consumable material is defined as any liquid solution or other material that is depleted as an electronic cigarette is used. The law went into effect 7/1/17 and current FY collections are approximately $140k.

Justin Carroll
Financial Economist
Kansas Department of Revenue
Office of Research and Analysis
785-296-8042
justin.carroll@ks.gov | www.ksrevenue.org

Appendix E

Response to Request for Tax Information: North Carolina

From: Alexander J Milak [mailto:Al.Milak@ncdor.gov]
Sent: Friday, October 27, 2017 9:18 AM
To: Shanda McClain
Cc: John D. Panza
Subject: Vapor Questions

Shanda,

1. How are vapor products and electronic cigarettes tax in your state? Please provide the statute.

§ 105-113.35. Tax on tobacco products other than cigarettes.
(a) Tax on Tobacco Products. – An excise tax is levied on tobacco products at the rate of twelve and eight-tenths percent (12.8%) of the cost price of the products. The tax rate does not apply to the following:
(1) Cigarettes subject to the tax in G.S. 105-113.5.
(2) Vapor products subject to the tax in subsection (a1) of this section.
(a1) Tax on Vapor Products. – An excise tax is levied on vapor products at the rate of five cents (5¢) per fluid milliliter of consumable product. All invoices for vapor products issued by manufacturers must state the amount of consumable product in milliliters.
(a2) Limitation. – The taxes imposed under this section do not apply to the following:
(1) A tobacco product sold outside the State.
(2) A tobacco product sold to the federal government.
(3) A sample tobacco product distributed without charge.

NC does not tax the devices for Excise Tax.

2. When did the tax become effective?

June 1, 2015

3. Has the tax rate increased or decreased?

No.

4. Please provide electronic cigarette collection data since inception of the tax.

Vapor Gross Collections July 2015 through June 2016			**Vapor Gross Collections July 2016 through June 2017**			**Vapor Gross Collections July 2017 through June 2018**	
	Vapor Products			**Vapor Products**			**Vapor Products**
Month	**Gross**		**Month**	**Gross**		**Month**	**Gross**
July-15	99,187.54		Jul-16	273,901.81		Jul-17	378,902.83
FYTD	99,187.54		FYTD	273,901.81		FYTD	378,902.83
August-15	252,620.80		August-16	278,102.48		August-17	293,244.03
FYTD	351,808.34		FYTD	552,004.29		FYTD	672,146.86
September-15	186,907.51		September-16	282,401.54		September-17	413,013.49
FYTD	538,715.85		FYTD	834,405.83		FYTD	1,085,160.35
October-15	239,531.06		October-16	297,081.90		October-17	0.00
FYTD	778,246.91		FYTD	1,131,487.73		FYTD	1,085,160.35
November-15	282,502.39		November-16	266,945.79		November-17	0.00
FYTD	1,060,749.30		FYTD	1,398,433.52		FYTD	1,085,160.35

December-15	294,151.87		December-16	191,375.30		December-17	0.00
FYTD	1,354,901.17		FYTD	1,589,808.82		FYTD	1,085,160.35
January-16	227,368.35		January-17	408,117.79		January-18	0.00
FYTD	1,582,269.52		FYTD	1,997,926.61		FYTD	1,085,160.35
February-16	276,521.45		February-17	364,425.48		February-18	0.00
FYTD	1,858,790.97		FYTD	2,362,352.09		FYTD	1,085,160.35
March-16	286,907.62		March-17	341,327.32		March-18	0.00
FYTD	2,145,698.59		FYTD	2,703,679.41		FYTD	1,085,160.35
April-16	218,915.08		April-17	264,527.05		April-18	0.00
FYTD	2,364,613.67		FYTD	2,968,206.46		FYTD	1,085,160.35
May-16	346,129.65		May-17	390,316.56		May-18	0.00
FYTD	2,710,743.32		FYTD	3,358,523.02		FYTD	1,085,160.35
June-16	242,149.97		June-17	334,367.29		June-18	0.00
FYTD	2,952,893.29		FYTD	3,692,890.31		FYTD	1,085,160.35
FY Total	**$2,952,893.29**		**FY Total**	**$3,692,890.31**		**FY Total**	**$1,085,160.35**
	GRAND TOTAL (SINCE INCEPTION)			**$7,730,943.95**			

Appendix F

North Carolina E-Cigarette Tax Collections from July 2015 through September 2017

July 2015	$99,187.54
August 2015	$252,620.80
September 2015	$186,907.51
October 2015	$239,531.06
November 2015	$282,502.39

December 2015	$294,151.87
January 2016	$227,368.35
February 2016	$276,521.45
March 2016	$286,907.62
April 2016	$218,915.08
May 2016	$346,129.65
June 2016	$242,149.97
July 2016	$273,901.81
August 2016	$278,102.48
September 2016	$282,401.54
October 2016	$297,081.90
November 2016	$266,945.79
December 2016	$191,375.30
January 2017	$408,117.79
February 2017	$364,425.48
March 2017	$341,327.32
April 2017	$264,527.05
May 2017	$390,316.56
June 2017	$334,367.29
July 2017	$378,902.83
August 2017	$293,244.03
September 2017	$413,013.49
Total	**$7,730,943.95**

Appendix G

Response to Request for Tax Information: Minnesota

Sent: Monday, October 23, 2017 1:35 PM
To: Vanessa LaFleur (LDR)
Subject: [Research] Request for Information

Minnesota does address vapor products specifically in statute:

1. Tobacco Products, tax rate statute: 297F.05.3. Here is some additional information on vapor products in Minnesota: http://www.revenue.state.mn.us/businesses/tobacco/Pages/e-Cig.aspx
2. Vapor products became taxable as tobacco products in 2012 per this revenue notice.

3. The other tobacco products tax rate in 2012 was 70% of the wholesale price, in 2013 the rate was increased to 95% of wholesale and has remained there since.
4. History of vapor products tax revenues:

FY 2014	$4.0 million
FY 2015	$4.5 million
FY 2016	$5.7 million
FY 2017	$7.0 million

Curtis Walker, Research Analyst
Minnesota Department of Revenue
651-556-6143
www.revenue.state.mn.us

Appendix H

Minnesota E-Cigarette Tax Collections for Fiscal Year 2014 through Fiscal Year 2017

Fiscal Year 2014	$4,000,000.00
Fiscal Year 2015	$4,500,000.00
Fiscal Year 2016	$5,700,000.00
Fiscal Year 2017	$7,000,000.00
Total	**$21,200,000.00**

Appendix **I**

Response to Request for Tax Information:: Pennsylvania

From: research@taxadmin.memberclicks.net [mailto:research@taxadmin.memberclicks.net]
Sent: Tuesday, October 24, 2017 10:55 AM
To: Vanessa LaFleur (LDR)
Subject: [Research] Request for Information

Answers for PA are below in red.

Elizabeth S. Bauer | RFA Manager
PA Department of Revenue | Bureau of Research
1147 Strawberry Square | Harrisburg, PA 17128

Phone: 717.783.9573 | Fax: 717.787.6738
www.revenue.state.pa.us

From: research@taxadmin.memberclicks.net [mailto:research@taxadmin.memberclicks.net]
Sent: Monday, October 23, 2017 12:37 PM
To: Bauer, Elizabeth <elbauer@pa.gov>
Subject: [Research] Request for Information

Pursuant to La. R.S. 47:841(F) Louisiana imposes a tax on vapor products and electronic cigarettes. The tax is five cents per milliliter of consumable nicotine liquid solution or other material containing nicotine that is depleted as a vapor product is used. We are requesting the following information from the states of California, Kansas, Minnesota, Pennsylvania, West Virginia and North Carolina:

1. How are vapor products and electronic cigarettes tax in your state? Please provide the statute.

Act 84 of 2016 created a tax on other tobacco products other than large cigars, including e-cigarettes, roll-your-own tobacco products, and smokeless tobacco. The tax rate on e-cigarettes and liquid substances to be used with them is 40 percent of the purchase price from the wholesaler.

72 P.S. § 8202-A (a.1):

Imposition of tax on electronic cigarettes.--A tobacco products tax is imposed on the dealer or manufacturer at the time the electronic cigarette is first sold to a retailer in this Commonwealth at the rate of 40% on the purchase price charged to the retailer for the purchase of electronic cigarettes. The tax shall be collected for the retailer by whomever sells the electronic cigarette to the retailer and remitted to the department. Any person required to collect this tax shall separately state the amount of tax on an invoice or other sales document.

2. When did the tax become effective?

The tax went into effect on October 1, 2016.

3. Has the tax rate increased or decreased?

The tax rate has not changed.

4. Please provide electronic cigarette collection data since inception of the tax.

PA's E-Cigarette Tax collections are shown below (in $millions). Please note that while the tax went into effect in October, the first returns were not due until January 20th, 2017 and contain three months of collections.

Jan-17	4.7
Feb-17	1.4
Mar-17	0.9
Apr-17	1.9
May-17	1.5
Jun-17	1.6
Jul-17	1.7
Aug-17	1.6
Sep-17	1.7

This information is needed for a report to the House Committee on Ways and Means and the House Committee on Health and Welfare. Please respond by Wednesday, October 25, 2017. Thanks for your assistance.

Vanessa Caston LaFleur, Esq.
Director | Policy & Legislative Services
Louisiana Department of Revenue
| P.O. Box 44098 | Baton Rouge, LA 70804-4098
| Office: (225) 219-2780 | Fax: (225) 219-2759|
E-mail: Vanessa.LaFleur@la.gov

For immediate assistance, please contact Shannon Thomas at (225) 219-2780.

Appendix J

Pennsylvania E-Cigarette Tax Collections from January 2017 through September 2017

January 2017*	$4,700,000.00
February 2017	$1,400,000.00
March 2017	$900,000.00
April 2017	$1,900,000.00
May 2017	$1,500,000.00
June 2017	$1,600,000.00

July 2017	$1,700,000.00
August 2017	$1,600,000.00
September 2017	$1,700,000.00
Total	**$17,000,000**

Appendix K

Response to Request for Tax Information: West Virginia

From: Stiles, Mary K [mailto:Mary.K.Stiles@wv.gov]
Sent: Monday, October 30, 2017 1:22 PM
To: Shanda McClain
Subject: RE: West Virginia Vapor Products and Electronic Cigarettes Information

Shanda,

WV Code §11-17-4b is a new section, which covers electronic cigarette liquids, of the Tobacco Products Excise Tax Act. This excise tax is $0.075 per milliliter of liquid, regardless of content. Wholesalers are responsible for this tax, but retailers and individuals assume the

responsibility when applicable. The effective start date of the new tax was July 1, 2016. WV has collected approximately $1,601,000 since inception.

Mary K. Stiles, B.A.M.
Tax Audit Clerk Senior
West Virginia State Tax Department
Telephone: (304) 558-8626
Facsimile: (304) 558-1989
Electronic Mail: Mary.K.Stiles@wv.gov

***Please note that a change in policy has occurred. In order to maintain strict confidentiality of taxpayer information, the Tax Account Administration Division (TAAD), under guidance from the Tax Commissioner and the Director of TAAD will no longer accept tax returns, tax reports or other tax documents that contain account numbers, filing numbers etc. via fax or email. If you would like to file your reports, or returns in a more expedient manner, the MyTaxes portal is a secure method that is setup specifically for this purpose. However, if you choose not to use this method, you may mail your returns or reports to the tax department. ***

Appendix L

Louisiana's E-cigarette Tax Collections from August 2015 to September 2017

Collection Period	Wholesale Dealers Vapor Tax	Retail Dealers Vapor Tax	Total Gross Collections
Aug-15	$249.68		$249.68
Sep-15	$30,808.89	$5,058.30	$35,867.19
Oct-15	$29,378.02	$28,593.91	$57,971.93
Nov-15	$25,200.82	$50,204.59	$75,405.41

Dec-15	$13,228.38	$56,849.44	$70,077.82
Jan-16	$16,781.45	$66,761.92	$83,543.37
Feb-16	$18,984.54	$61,569.04	$80,553.58
Mar-16	$9,758.35	$36,748.44	$46,506.79
Apr-16	$19,651.82	$47,030.01	$66,681.83
May-16	$18,375.45	$51,279.91	$69,655.36
Jun-16	$17,831.74	$100,051.94	$117,883.68
Jul-16	$18,565.21	$53,246.44	$71,811.65
Aug-16	$14,816.45	$72,180.37	$86,996.82
Sep-16	$16,485.05	$55,776.19	$72,261.24
Oct-16	$23,424.63	$57,662.27	$81,086.90
Nov-16	$13,930.16	$50,780.85	$64,711.01
Dec-16	$17,867.23	$48,916.00	$66,783.23
Jan-17	$15,036.88	$57,766.44	$72,803.32
Feb-17	$13,153.05	$33,666.32	$46,819.37
Mar-17	$11,746.21	$63,357.19	$75,103.40
Apr-17	$20,071.44	$34,870.38	$54,941.82
May-17	$16,602.67	$80,986.15	$97,588.82
Jun-17	$17,054.71	$66,076.31	$83,131.02
Jul-17	$17,625.95	$52,951.57	$70,577.52
Aug-17	$17,878.87	$73,875.65	$91,754.52
Sep-17	$13,651.52	$79,679.33	$93,330.85
Totals	**$448,159.15**	**$1,385,938.96**	**$1,834,098.11**

Appendix M

Louisiana Department of Revenue's Request for Challenges Information sent to California, Kansas, North Carolina, Minnesota, Pennsylvania, and West Virginia.

From: Shanda McClain [mailto:Shanda.McClain@LA.GOV]
Subject: RE: [Research] Request for Information

1. What challenges are you facing enforcing the tax, how are the challenges being eliminated and do you have any recommendations?

Thanks for your assistance.

Shanda J. McClain
Attorney Supervisor-Excise
Board Certified Tax Law Specialist
Certified by the Louisiana Board of Legal Specialization
Policy Services Division
Louisiana Department of Revenue
Post Office Box 44098

Appendix N

Response to Request for Challenges: California

Hello Ms. McClain,

This is in reply to your questions sent to Michael Lee regarding the challenges our agency is facing enforcing the California tobacco products excise tax on distributions of electronic cigarette products. You also want to know how our agency is eliminating the challenges and whether we have any recommendations.

Since electronic cigarette products containing nicotine just recently became a tobacco product in California (April 1, 2017), it's still too early in the process of collecting the tobacco products excise tax on these products to determine any significant underreporting issues.

In reaction to the passage of California Proposition 56 in November 2016, which made products containing nicotine a tobacco product, our agency provided the following special notices *Cigarette and Tobacco Products Tax Rate Increase and New Products Subject to Tax* and *New Licensing Requirements for Manufacturers/Importers, Distributors, and Wholesalers of Nicotine Products Beginning April 1, 2017*. In realizing that many of the California retailers of these electronic cigarette (vape) products will also be classified as manufacturers under the California tobacco products tax and licensing laws, we recently adopted Cigarette and Tobacco Products Regulation 4076. Regulation 4076 provides requirements for determining the wholesale cost subject to the tobacco products excise tax for transactions in which the manufacturer is also the distributor, along with transactions between related parties. Currently, our Investigations Division investigators will make random visits to retailers that sell e-cigarette (vape) products, but these visits have been more about providing information to these retailers rather than issuing citations for violations, which may happen in subsequent follow-up inspections.

Let me know if you have further questions.

Lisa Sherrod
Administrator, Program Administration Branch
California Department of Tax and Fee Administration
450 N Street, MIC: 31, Sacramento, CA 95814)]
Phone: 916-323-9401
E: Lisa.Sherrod@cdtfa.ca.gov | www.cdtfa.ca.gov

Important Notice: Recent legislation created the California Department of Tax and Fee Administration to administer the taxes and fees previously collected by the Board of Equalization, with the exception of Property Tax, Alcoholic Beverage Tax and Insurance Tax. All of your account information will remain the same. Additional information concerning this recent change can be found at www.boe.ca.gov and at www.cdtfa.ca.gov.

Appendix **O**
Response to Request for Challenges: Kansas

From: Justin Carroll [KDOR] [mailto:Justin.Carroll@KS.GOV]
Sent: Friday, October 27, 2017 9:47 AM
To: Shanda McClain
Subject: RE: [Research] Request for Information

Well, getting everything off the ground was a long, arduous process. The KS Legislature originally approved measures to begin taxation in I believe 2014. The Department then asked them to push the implementation date out from I think 2016 to 1/1/17. During CY 2016, the Department began

meeting with numerous industry representatives to iron out the regulations that would be the backbone of the law. Unfortunately, that process got bogged down and the Department was unable to get regulations passed by 1/1/17. During the 2017 Legislative Session, the Department continued working with industry representatives since there was some resistance to some of the definitions the Department was proposing. We were able to iron out an agreement and get a bill passed this year that clarified in statute the definition for consumable material (the biggest area of concern for industry) and it went into effect 7/1/17.

As far as I know, there haven't been too many issues with enforcement after everyone came to an agreement on this year's legislation. The vendors are just required to submit monthly returns. Let me know if I can be of any more assistance.

Justin Carroll
Financial Economist
Kansas Department of Revenue
Office of Research and Analysis
785-296-8042
justin.carroll@ks.gov | www.ksrevenue.org

From: Shanda McClain [mailto:Shanda.McClain@LA.GOV]
Sent: Monday, October 30, 2017 8:20 AM
To: Justin Carroll [KDOR] <Justin.Carroll@KS.GOV>
Subject: RE: [Research] Request for Information

Justin,

Thanks for the information. When does your fiscal year begin and end? So, no taxes were collected prior to July 1, 2017 correct?

Shanda J. McClain
Attorney Supervisor-Excise
Board Certified Tax Law Specialist
Certified by the Louisiana Board of Legal Specialization
Policy Services Division
Louisiana Department of Revenue
Post Office Box 44098
Baton Rouge, Louisiana 70804-4098
225-219-2780
225-219-2759 Fax

From: Justin Carroll [KDOR] [mailto:Justin.Carroll@KS.GOV]
Sent: Monday, October 30, 2017 8:46 AM
To: Shanda McClain
Subject: RE: [Research] Request for Information

It begins on July 1. Technically, some vendors started voluntarily remitting as of Jan 1 but as stated since there were some technical hang-ups the Department could not force anyone to actually remit tax. So once new legislation was in place credits were given for anyone who remitted prior to July 1.

Justin Carroll
Financial Economist
Kansas Department of Revenue
Office of Research and Analysis
785-296-8042
justin.carroll@ks.gov | www.ksrevenue.org

Appendix **P**
Response to Request for Challenges: Minnesota

From: Walker, Curtis (MDOR) [mailto:curtis.walker@state.mn.us]
Sent: Tuesday, October 31, 2017 11:37 AM
To: Shanda McClain
Cc: Hevern, Alex (MDOR)
Subject: RE: [Research] Request for Information

Hello Shanda,

Here is some more information from our Special Taxes division, which collects the tax:

One of the challenges faced by Minnesota is that that our tobacco tax statute does not provide clear guidance on vapor products.

The current excise tobacco statute provides inconsistent treatment of similar situated vapor products. Vapor products are currently taxed at the tobacco excise tax rate of the 95% of the wholesale cost. In many circumstances this tax assessment is made only on the nicotine solution itself, rather than on the sale of the final consumable product.

Meanwhile vapor products that are in a consumable form when brought into Minnesota are taxed at the same 95% rate but on a much higher value. This results in a significant tax discrepancy for two very similar products: Artificially low tobacco taxes on vapor products when the final (often flavored) solution is mixed in Minnesota, as is most often the case for vapor shops. High tobacco taxes for similar products that are shipped into Minnesota when shipped into Minnesota in their final consumable form.

During the 2017 legislative session, a bill was proposed that would have modified the tobacco tax statute to standardize how vapor products are taxed in Minnesota. However, this proposal did not move forward.

I hope this helps. Let me know if you need anything else.

Curtis Walker, Research Analyst
Minnesota Department of Revenue
651-556-6143
www.revenue.state.mn.us

DEPARTMENT OF REVENUE

Working together to fund Minnesota's future.

Appendix Q
Response to Request for Challenges: Pennsylvania

From: Bauer, Elizabeth [mailto:elbauer@pa.gov]
Sent: Tuesday, October 31, 2017 12:38 PM
To: Shanda McClain
Subject: RE: [Research] Request for Information

Shanda,

From a policy perspective, we have received pushback from the independent vaping lobby who wants a per mL tax at the retail level (as opposed to our current 40% tax at the wholesale level). Language has been introduced to change the tax structure, but so far nothing has passed.

The following is from our Bureau of Trust Fund Taxes:

Below are the main issues we have encountered regarding e-CIG administration.

Out of state companies are a problem for both the enforcement and administrating aspect. Enforcement does not have the means to visit out of state companies, especially those across the country, and therefore reporting and taxation do not happen. A high call volume of complaints were received about the high tax rate and the type of products taxed. This also made businesses refuse to collect and remit tax. In addition, complaint were received from small and large companies stating that they do not have the system capabilities to produce all of the required reporting information that was requested in the law.

Let me know if I can be of additional help.

Elizabeth

Elizabeth S. Bauer | RFA Manager
PA Department of Revenue | Bureau of Research
1147 Strawberry Square | Harrisburg, PA 17128
Phone: 717.783.9573 | Fax: 717.787.6738
www.revenue.state.pa.us

Appendix **R**

Response to Request for Challenges: West Virginia

From: Stiles, Mary K [mailto:Mary.K.Stiles@wv.gov]
Sent: Monday, October 30, 2017 1:22 PM
To: Shanda McClain
Subject: RE: West Virginia Vapor Products and Electronic Cigarettes Information

Shanda,

WV had two initial challenges, which we continue to experience. One was getting all of the proper entities to register and file. The other was getting the proper entities to file and pay correctly. If a retailer had floor stock, they could deplete it without paying the tax, but all of their purchases beginning July 1, 2016, were subject to the tax. All of the wholesalers, and online retailers, were responsible for the tax with their first sale beginning July 1, 2016.

Some WV manufacturers created an exorbitant amount of liquids prior to the effective date, hoping to delay the tax payments. If they manufactured the products and only sold retail, that was fine. The problem we had was with the manufacturers selling wholesale and retail. They thought selling wholesale, not just retail, from their floor stock was exempt.

I recommend educating all of your staff, who handle this tax, as early as possible. Make certain field agents and attorneys are "on the same page" as directors and auditors. If a taxpayer receives incorrect information, they will use that against you to avoid paying the tax. If you have further questions or concerns, you may contact me. I will be happy to assist you. Have a very nice afternoon.

Mary K. Stiles, B.A.M.
Tax Audit Clerk Senior
West Virginia State Tax Department
Telephone: (304) 558-8626
Facsimile: (304) 558-1989
Electronic Mail: Mary.K.Stiles@wv.gov

***Please note that a change in policy has occurred. In order to maintain strict confidentiality of taxpayer information, the Tax Account Administration Division (TAAD), under guidance from the Tax Commissioner and the Director of TAAD will no longer accept tax returns, tax reports or other tax documents that contain account numbers, filing numbers etc. via fax or email. If you would like to file your reports, or returns in a more expedient manner, the MyTaxes portal is a secure method that is setup specifically for this purpose. However, if you choose not to use this method, you may mail your returns or reports to the tax department. ***

Louisiana Department of Health
628 North Fourth Street, Baton Rouge, Louisiana 70802
(225) 342-9500
www.ldh.la.gov


www.facebook.com/LaHealthDept.


www.twitter.com/LADeptHealth