



INCREASING THE MINIMUM LEGAL SALE AGE FOR TOBACCO PRODUCTS TO 21

*“Raising the legal minimum age for cigarette purchaser to 21 could gut our key young adult market (17-20) where we sell about 25 billion cigarettes and enjoy a 70 percent market share.”¹
— Philip Morris report, January 21, 1986*

Tobacco use remains the leading cause of preventable death in the United States, killing more than 480,000 people each year.² It is known to cause cancer, heart disease and respiratory diseases, among other health disorders, and costs the U.S. as much as \$170 billion in health care expenditures each year.³ Each day, more than 300 kids under the age of 18 become regular, daily smokers; and almost one-third will eventually die from smoking.⁴ If current trends continue, 5.6 million of today’s youth will die prematurely from a smoking-related illness.⁵

High tobacco taxes, comprehensive smoke-free laws and comprehensive tobacco prevention and cessation programs are proven strategies to reduce tobacco use and save lives. Increasing the minimum legal sale age (MLSA) for tobacco products to 21 complements these approaches to reduce youth tobacco use and to help users quit.

Six states – California, New Jersey, Massachusetts, Oregon, Hawaii and Maine – have raised the tobacco age to 21, along with at least 380 localities, including New York City, Chicago, San Antonio, Boston, Washington, DC, Cleveland, Minneapolis, and both Kansas Cities.⁶

Raising the legal sale age is popular with the public, including smokers. A July 2015 CDC report found that three quarters of adults favor raising the tobacco age to 21, including seven in 10 smokers. The idea has broad-based support across the country, including support among men and women, and Americans of all income, education, race/ethnicity and age groups.⁷

There is strong reason to believe that MLSA 21 will contribute to reductions in youth tobacco use. Central to the MLSA strategy are the facts that many smokers transition to regular, daily use between the ages of 18 and 21; many young adult smokers serve as a social source of tobacco products for youth; and tobacco companies have long viewed young adults ages 18 to 21 as a target market group. The key facts supporting the policy derive from the 2015 Institute of Medicine report on raising the tobacco sale age; evidence from jurisdictions that have adopted the policy; research on youth and young adult tobacco use and access, and research on industry marketing tactics.

The IOM Predicts MLSA 21 Will Reduce Smoking and Save Lives

A March 2015 report by the Institute of Medicine (IOM), one of the most prestigious scientific authorities in the United States, strongly concluded that raising the tobacco sale age to 21 will have a substantial positive impact on public health and save lives.⁸ Based on a review of the literature and predictive modelling, it finds that raising the tobacco sale age will significantly reduce the number of adolescents and young adults who start smoking; reduce smoking-caused deaths; and immediately improve the health of adolescents, young adults and young mothers who would be deterred from smoking, as well as their children. Specifically, the report predicts that raising the minimum age for the sale of tobacco products to 21 will, over time, reduce the smoking rate by about 12 percent and smoking-related deaths by 10 percent, which translates into 223,000 fewer premature deaths, 50,000 fewer deaths from lung cancer, and 4.2 million fewer years of life lost.

Emerging Evidence Is Promising

Because it is a relatively new strategy, data on the impact of increasing the MLSA to 21 is limited; but, the data that are available provide strong reason to believe that it will contribute to reductions in youth tobacco use.

Based on preliminary data available from California, New York City, and Chicago, raising the tobacco sale age to 21 can be easily implemented and can help reduce youth access to and use of tobacco.

California

California's Tobacco 21 law became effective in June 2016. Initial evaluation results indicate that there is high awareness and support for the new law among tobacco retailers and young adults, two key audiences for ensuring compliance with the law. In addition, tobacco purchase data show that there is high compliance with the law among retailers.⁹

- **Implementation:** Virtually all retailers (98.6%) were aware of the new law 7 months after its effective date, and a large majority of retailers supported the law (60.6%). Nearly two-thirds of young adults were aware of the law.
- **Retail sales to teens:** Tobacco purchase data show a significant decline in tobacco sales to younger teens following implementation of the law. Specifically, compliance data for 15-16 year olds showed a 45% reduction in sales of tobacco products to underage buyers before and after the law. Before the law, 10.3% of sampled retailers sold tobacco to 15 to 16 year olds. After the law, 5.7% of sampled retailers sold tobacco to 15-16 year olds. Prior to the higher sale age law, for this age group, the retailer violation rate had been flat since 2009, suggesting strongly that the higher age limit is related to the decline. There was also a significant decrease in illegal tobacco sales among tobacco-only retailers after the law was implemented.

New York City

In August of 2014, New York City simultaneously implemented policies to raise the tobacco sale age to 21 and to reduce sources of cheap tobacco. While reductions in smoking cannot be attributed solely to the Tobacco 21 law, preliminary findings suggest that the law is contributing to reductions in youth tobacco use:

- Data from the Youth Risk Behavior Survey show that there was a 29 percent decline in current cigarette smoking among high school students between 2013 and 2015. There were also reductions in ever trying cigarettes (-18%) and smoking initiation in the past 12 months (-13%), over the same time period.¹⁰

Chicago

Chicago has taken a number of actions to reduce tobacco use in recent years including increasing the cost of tobacco and restricting the sale of flavored tobacco products. In addition, in July 2016, Chicago implemented a policy to raise the tobacco sale age to 21. Data show that Chicago's comprehensive approach is reducing smoking:

- Data from the Youth Risk Behavior Survey show only 6% of Chicago high school students reported current cigarette smoking in 2017, an all-time low. This represents a 56% decrease in cigarette smoking among youth since 2011.
- Chicago's annual Healthy Chicago survey found that current smoking of cigarettes and e-cigarettes among 18-20 year olds declined by over one third between 2015 and 2016, from 15.2% to 9.7%.¹¹

Most Adult Smokers Start Smoking Before Age 21

National data show that about 95 percent of adult smokers begin smoking before they turn 21, and a substantial number of smokers start even younger— about three-quarters of adult smokers first try smoking before age 18.¹² While less than half (46%) of adult smokers become regular, daily smokers before age 18, four out of five become regular, daily smokers before they turn 21.¹³ This means the 18 to 21 age range is a time when many smokers transition to regular use of cigarettes.¹⁴ According to one national survey, the prevalence of current smoking among 18-20 year olds is more than double that of 16-17 year olds (18.8% vs. 7.5%).¹⁵

Another national survey found that among middle and high schoolers who had ever smoked cigarettes, the median age of first trying smoking was 12.6 years old. Over half (55.4%) of youth who had ever smoked cigarettes had initiated by age 13. Youth who started smoking before or at age 13 were more likely to be current smokers and to report greater nicotine dependence.¹⁶

Tobacco companies have admitted in their own internal documents that, if they don't capture new users by their early 20's, it is very unlikely that they ever will. In 1982, one RJ Reynolds researcher stated:

*"If a man has never smoked by age 18, the odds are three-to-one he never will.
By age 24, the odds are twenty-to-one."¹⁷*

Delaying the age when young people first experiment or begin using tobacco can reduce the risk that they transition to regular or daily tobacco use and increase their chances of successfully quitting, if they do become regular users.¹⁸ The IOM report notes that the age of initiation is critical and predicts that "Increasing the minimum age of legal access to tobacco products will likely prevent or delay initiation of tobacco use by adolescents and young adults."¹⁹

Adolescents are particularly vulnerable to the addictive effects of nicotine. The IOM report found that "The parts of the brain most responsible for decision making, impulse control, sensation seeking, and susceptibility to peer pressure continue to develop and change through young adulthood, and adolescent brains are uniquely vulnerable to the effects of nicotine and nicotine addiction."²⁰ The U.S. Surgeon General has stated that "the potential long-term cognitive effects of exposure to nicotine in this age group are of great concern."²¹ Because adolescence and young adulthood are critical periods of growth and development, exposure to nicotine may have lasting, adverse consequences on brain development. The IOM report's review of the literature on the developmental context of youth tobacco use emphasizes that the brain continues to develop "until about age 25."²² As reported by the U.S. Surgeon General:

"This earlier age of onset of smoking marks the beginning of the exposure to the many harmful components of smoking. This is during an age range when growth is not complete and susceptibility to the damaging effects of tobacco smoke may be enhanced. In addition, an earlier age of initiation extends the potential duration of smoking throughout the lifespan. For the major chronic diseases caused by smoking, the epidemiologic evidence indicates that risk rises progressively with increasing duration of smoking; indeed, for lung cancer, the risk rises more steeply with duration of smoking than with number of cigarettes smoked per day."²³

Adding to the concern is the fact that young people can often feel dependent earlier than adults.²⁴ Though there is considerable variation in the amount of time young people report it takes to become addicted to using tobacco, key symptoms of dependence—withdrawal and tolerance—can be apparent after just minimal exposure to nicotine.²⁵ According to the 2014 Report of the Surgeon General, "the addiction caused by the nicotine in tobacco smoke is critical in the transition of smokers from experimentation to sustained smoking and, subsequently, in the maintenance of smoking for the majority of smokers who want to quit."²⁶ IOM's recent review summed up the evidence:

"It is clear that the juxtaposition of numerous risk factors during the adolescent and young adult years is likely to increase the probability that first trials of tobacco use will turn into persistent use. These factors include the sequence of neurodevelopment in the adolescent years, the unique sensitivity of the adolescent brain to the rewarding properties of nicotine, the early development of symptoms of dependence in an adolescent's smoking experience (well before reaching the 100-cigarette lifetime threshold), and the difficulties that adolescents have in stopping smoking."²⁷

As a result of nicotine addiction, about three out of four teen smokers end up smoking into adulthood, even if they intend to quit after a few years.²⁸ As noted above, smoking-related health problems are influenced by both the duration (years) and intensity (amount) of use. Unfortunately, individuals who start smoking at younger ages are more likely to smoke as adults, and they also are among the heaviest

users.²⁹ In addition to longer-term health risks such as cancer and heart disease, young people who smoke are at risk for more immediate health harms, like increased blood pressure, asthma and reduced lung growth.³⁰

Over the past several years, there has been a rapid rise in youth use of electronic cigarettes. This is a concern because as stated by the Surgeon General, “E-cigarette use poses a significant – and avoidable – health risk to young people in the United States. Besides increasing the possibility of addiction and long-term harm to brain development and respiratory health, e-cigarette use is associated with the use of other tobacco products that can do even more damage to the body.”³¹

E-cigarettes are now the most popular tobacco product among young people. According to the National Youth Tobacco Survey, 20.8 percent of high schoolers and 4.9 percent of middle schoolers reported current use of e-cigarettes in 2018.³² 2014-2016 data from the same survey showed that among middle and high schoolers who had ever tried e-cigarettes, the median age of first trying an e-cigarette was 14.1.³³ A 2018 report by the National Academies of Science, Engineering and Medicine (NASEM) found the effect of e-cigarette use on cigarette smoking initiation to be causal, concluding that “There is substantial evidence that e-cigarette use increases risk of ever using combustible tobacco cigarettes among youth and young adults.”³⁴

Older Adolescents and Young Adults Are a Source of Cigarettes for Youth

According to the 2018 Monitoring the Future Survey, more than 60% of 10th grade students and nearly half (46%) of 8th grade students say it is easy to get cigarettes. More than 60% of 10th grade students also say it is easy to get vaping devices and e-liquids.³⁵ This perception that getting tobacco products is easy exists despite the fact that fewer retailers are selling tobacco to underage youth than before. In 2014 (federal fiscal year), the national retailer violation rate was 9.8 percent.³⁶ This suggests that youth are obtaining cigarettes from sources other than direct store purchases.

Research shows that youth smokers identify social sources, such as friends and classmates, as a common source of cigarettes. Although older and more established youth smokers are more likely to attempt to purchase their cigarettes directly than kids who smoke less frequently or are only “experimenting,” they are also major suppliers for kids who do not purchase their own cigarettes but instead rely on getting them from others.³⁷ And with more 18- and 19-year olds in high school now than in previous years, younger adolescents have daily contact with students who can legally purchase tobacco for them.³⁸

National studies find that underage youth commonly obtain cigarettes from social networks. The 2013-2014 wave of the Population Assessment of Tobacco and Health (PATH) study found that 75% of 15-17 year old current smokers obtained cigarettes from social sources.³⁹ Data from the National Survey on Drug Use and Health (NSDUH) show that nearly two-thirds (63.3%) of 12- to 17-year olds who had smoked in the last month had given money to others to buy cigarettes for them. One-third (30.5%) had purchased cigarettes from a friend, family member or someone at school. In addition, six out of ten (62%) had “bummed” cigarettes from others.⁴⁰

Raising the sale age of tobacco to 21 is likely to make both direct retail purchase and social source acquisition more difficult for underage youth, especially for 15-, 16-, and 17- year olds, “who are most likely to get tobacco from social sources, including from students and co-workers above the [minimum legal age of access] MLA.”⁴¹ With the minimum legal sale age set at 21 instead of 18, legal purchasers would be less likely to be in the same social networks as high school students and therefore less able to sell or give cigarettes to them.

Tobacco Companies Target Young Adults Ages 18 to 21

Tobacco industry advertising and promotional activities cause youth and young adults to start smoking, and nicotine addiction keeps people smoking past those ages.⁴² Tobacco companies heavily target young adults ages 18 to 21 through a variety of marketing activities—such as music and sporting events, bar promotions, college scholarships and parties—because they know it is a critical time period for solidifying

tobacco addiction.⁴³ It is also a time when the industry tries to deter cessation and recapture recent quitters.⁴⁴

Tobacco companies realize that the transition into regular smoking that occurs during young adulthood is accompanied by an increase in consumption, partly because the stresses of life transitions during that time—going to college, leaving home, starting a new job, joining the military, etc.—invite the use of cigarettes for the effects of nicotine.⁴⁵ Statements obtained from the tobacco industry’s internal documents emphasize the importance of increasing consumption within this target market in order to maintain a profitable business:

“...eighteen to twenty-four year olds will be “[c]ritical to long term brand vitality as consumption increases with age.”⁴⁶

“...[t]he number one priority for 1990 is to obtain younger adult smoker trial and grow younger adult smoker share of market.”⁴⁷

“To stabilize RJR’s share of total smokers, it must raise share among 18-20 from 13.8% to 40%...ASAP.”⁴⁸

*“Our aggressive Plan calls for gains of about 5.5 share points of smokers 18-20 per year, 1990-93 (about 120,000 smokers per year). Achieving this goal would produce an incremental cash contribution of only about \$442MM during the Plan period (excluding promotion response in other age groups and other side benefits). However, if we hold these YAS [young adult smokers] for the market average of 7 years, they would be worth **over \$2.1 billion in aggregate incremental profit**. I certainly agree with you that this payout should be worth a decent sized investment.” [emphasis in original]⁴⁹*

In 2006, after reviewing the evidence against the tobacco companies in a civil racketeering case brought forth by the U.S. Department of Justice, U.S. District Court Judge Gladys Kessler made this conclusion about the industry’s marketing practices:

“From the 1950s to the Present, Different Defendants, at Different Times and Using Different Methods, Have Intentionally Marketed to Young People Under the Age of Twenty-one in Order to Recruit ‘Replacement Smokers’ to Ensure the Economic Future of the Tobacco Industry.”⁵⁰

And in 2014, the U.S. Surgeon General eliminated all doubt regarding the industry’s role in perpetuating our nation’s tobacco epidemic. He stated:

“...the root cause of the smoking epidemic is also evident: the tobacco industry aggressively markets and promotes lethal and addictive products, and continues to recruit youth and young adults as new consumers of these products.”⁵¹

Increasing the Minimum Drinking Age Law to 21 Reduced Youth Drinking and Fatalities

The public health benefits and lessons learned from increasing the minimum drinking age to 21 offer additional support for pursuing a higher MLSA for tobacco products. In the early 1980’s, many states raised the legal drinking age to 21. By 1988, all states had minimum drinking age laws of 21.⁵² Data from the Monitoring the Future Survey show that past month and binge drinking among high school seniors decreased by 22 percent between 1982 and 1998, while youth drinking driver involvement in fatal crashes decreased by 61 percent over this same time period. The decrease in drinking may account for some of the decrease in drinking and driving.⁵³

Subsequent research suggests that raising the minimum drinking age to 21 is associated with reduced alcohol consumption among youth and young adults and fewer alcohol-related crashes.⁵⁴ In fact, the National Highway Traffic Safety Administration reports that, since 1975, increasing the minimum drinking age has saved more than 21,000 lives.⁵⁵ Moreover, research shows that, when the drinking age is 21,

individuals under 21 drink less and continue to drink less through their early twenties.⁵⁶ With increased enforcement of the law, these impacts could be even greater.⁵⁷

The IOM concluded in its review that “raising the minimum legal drinking age for alcohol coupled with rigorous enforcement and penalties for violations has been associated with lowered rates of alcohol consumption among adolescents and adults as well as with reduced rates of alcohol-related adverse events (e. g. traffic crashes and hospitalizations).”⁵⁸

Benefits of Raising the MLSA to 21

Comprehensive approaches to addressing public health problems work. Much like increasing the minimum drinking age has not eliminated underage drinking, a higher MLSA is not likely to eliminate underage tobacco use. Rather, it is one more part of a comprehensive tobacco control effort that offers several benefits that could help reduce youth tobacco use and increase the likelihood that youth will grow up to be tobacco-free:

- Delaying the age when young people first begin using tobacco would reduce the risk that they will transition to regular or daily tobacco use and increase their chances of quitting, if they become regular users.⁵⁹
- Raising the MLSA to 21 would increase the age gap between adolescents initiating tobacco use and those who can legally provide them with tobacco products by helping to keep tobacco out of schools.⁶⁰
- Younger adolescents would also have a harder time passing themselves off as 21-year-olds than they would 18-year-olds, which could reduce underage sales.⁶¹
- MLSA of 21 may simplify identification checks for retailers, since many state drivers' licenses indicate that a driver is under the age of 21 (e.g. license format, color or photo placement).⁶²

Campaign for Tobacco-Free Kids, December 18, 2018 / Laura Bach

¹ Philip Morris, “Discussion Draft Sociopolitical Strategy,” January 21, 1986, Bates Number 2043440040/0049, <http://legacy.library.ucsf.edu/tid/aba84e00>.

² U.S. Department of Health and Human Services. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.

³ Xu, X., et al., “Annual Healthcare Spending Attributable to Cigarette Smoking: An Update,” *Am J Prev Med*, 2014. HHS. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General.*, 2014.

⁴ Substance Abuse and Mental Health Services Administration (SAMHSA), HHS, *Results from the 2017 National Survey on Drug Use and Health, NSDUH: Detailed Tables* <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHDetailedTabs2017/NSDUHDetailedTabs2017.pdf>; CDC, “The Health Consequences of Smoking – 50 Years of Progress A Report of the Surgeon General 2014,” <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/50-years-of-progress-by-section.html>

⁵ HHS. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*. 2014.

⁶ Some of the localities are in the states that subsequently enacted statewide laws. See:

http://www.tobaccofreekids.org/content/what_we_do/state_local_issues/sales_21/states_localities_MLSA_21.pdf; for a case study of NYC’s adoption of Tobacco 21, see SCTC, *Reducing Cheap Tobacco & Youth Access: New York City*, June 2015, http://publichealthlawcenter.org/sites/default/files/resources/ASPIRE_2015_NYC_POS_CaseStudy.pdf

⁷ King, Brian A., Jama, AO, Marynak, KL, and Promoff GR, “Attitudes Toward Raising the Minimum Age of Sale for Tobacco Among U.S. Adults,” *American Journal of Preventive Medicine*, 2015, <http://www.sciencedirect.com/science/article/pii/S0749379715002524>

⁸ Institute of Medicine (now the National Academy of Medicine), *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, Washington, DC: The National Academies Press, 2015, <http://www.nationalacademies.org/hmd/Reports/2015/TobaccoMinimumAgeReport.aspx>

⁹ Zhang, X., et al., “Evaluation of California’s ‘Tobacco 21’ law,” *Tobacco Control*, 2018.

¹⁰ Farley, Shannon and John Jasek, *Evaluating Sensible Tobacco Enforcement and Tobacco 21 Laws in New York City* (Power Point slides), New York, NY: Bureau of Chronic Disease Prevention & Tobacco Control, New York City Department of Health and Mental Hygiene, September 2017; Centers for Disease Control and Prevention, *NYC Youth Risk Behavior Survey* data, 2013, 2015, www.cdc.gov/yrbbs

¹¹ Chicago Department of Public Health, *Healthy Chicago Data Brief: 2017 Youth Tobacco Use*, Chicago, IL: Chicago Health Department, January 2018.

¹² United States Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Center for Behavioral Health Statistics and Quality. *National Survey on Drug Use and Health*, 2014. ICPSR36361-v1. Ann Arbor, MI: Inter-university

Consortium for Political and Social Research [distributor], 2016-03-22. <http://doi.org/10.3886/ICPSR36361.v1>; see also Table 2-8 in Institute of Medicine, *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, Washington, DC: The National Academies Press, 2015. <http://iom.nationalacademies.org/Reports/2015/TobaccoMinimumAgeReport.aspx>

¹³ Calculated based on data from the Substance Abuse and Mental Health Services Administration (SAMHSA)'s public online data analysis system (PDAS), National Survey on Drug Use and Health, 2016. <https://pdas.samhsa.gov/#/survey/NSDUH-2016-DS0001>.

¹⁴ Calculated based on data from the Substance Abuse and Mental Health Services Administration (SAMHSA)'s public online data analysis system (PDAS), National Survey on Drug Use and Health, 2016. <https://pdas.samhsa.gov/#/survey/NSDUH-2016-DS0001>. See also: Hammond, D, "Smoking behaviour among young adults: beyond youth prevention," *Tobacco Control*, 14:181 – 185, 2005. Lantz, PM, "Smoking on the rise among young adults: implications for research and policy," *Tobacco Control*, 12(Suppl 1):i60 – i70, 2003.

¹⁵ Substance Abuse and Mental Health Services Administration (SAMHSA)'s public online data analysis system (PDAS), National Survey on Drug Use and Health, 2016. https://pdas.samhsa.gov/#/survey/NSDUH-2016-DS0001/crosstab?row=CIGMON&column=CATAG7&weight=ANALWT_C&results_received=true. Current smoker defined as past month.

¹⁶ Sharapova, S, et al., "Age of tobacco use initiation and association with current use and nicotine dependence among US middle and high school students, 2014-2016," *Tobacco Control*, published online November 29, 2018.

¹⁷ RJ Reynolds, "Estimated Change in Industry Trend Following Federal Excise Tax Increase," September 10, 1982, Bates Number 513318387/8390, <http://legacy.library.ucsf.edu/tid/tib23d00;jsessionid=211D4CCF0DBD25F9DC2C9BB025239484.tobacco03>.

¹⁸ See, e.g., Khuder, SA, et al., "Age at Smoking Onset and its Effect on Smoking Cessation," *Addictive Behavior* 24(5):673-7, September-October 1999; D'Avanzo, B, et al., "Age at Starting Smoking and Number of Cigarettes Smoked," *Annals of Epidemiology* 4(6):455-59, November 1994; Chen, J & Millar, WJ, "Age of Smoking Initiation: Implications for Quitting," *Health Reports* 9(4):39-46, Spring 1998; Everett, SA, et al., "Initiation of Cigarette Smoking and Subsequent Smoking Behavior Among U.S. High School Students," *Preventive Medicine* 29(5):327-33, November 1999; Breslau, N & Peterson, EL, "Smoking cessation in young adults: Age at initiation of cigarette smoking and other suspected influences," *American Journal of Public Health* 86(2):214-20, February 1996.

¹⁹ Institute of Medicine, *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, Washington, DC: The National Academies Press, 2015. <http://www.nationalacademies.org/hmd/Reports/2015/TobaccoMinimumAgeReport.aspx>

²⁰ IOM briefing paper, p. 3,

http://iom.nationalacademies.org/~media/Files/Report%20Files/2015/TobaccoMinAge/tobacco_minimum_age_report_brief.pdf

²¹ HHS. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*, 2014.

²² Institute of Medicine, *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, Washington, DC: The National Academies Press, 2015. <http://iom.nationalacademies.org/Reports/2015/TobaccoMinimumAgeReport.aspx>

²³ U.S. Department of Health and Human Services. *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*, 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, 2012.

²⁴ HHS. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*. , 2014. HHS, *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*, 2012; U.S. Department of Health and Human Services (USDHSS), *How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: A Report of the Surgeon General*, 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.

²⁵ HHS. *How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: A Report of the Surgeon General*, 2010.

²⁶ HHS. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*, 2014.

²⁷ Institute of Medicine, *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, Washington, DC: The National Academies Press, 2015. <http://www.nationalacademies.org/hmd/Reports/2015/TobaccoMinimumAgeReport.aspx>

²⁸ HHS. *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*, 2012.

²⁹ USDHSS, *Preventing Tobacco Use Among Young People: A Report of the Surgeon General*, 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, 1994.

³⁰ HSS. *Preventing Tobacco Use Among Young People: A Report of the Surgeon General*, 1994. See also Campaign for Tobacco-Free Kids fact sheet, "Health Harms from Smoking and Other Tobacco Use," <http://www.tobaccofreekids.org/research/factsheets/pdf/0194.pdf>.

³¹ HHS, *Know the Risks: E-Cigarettes & Young People*, accessed March 15, 2018 at <https://e-cigarettes.surgeongeneral.gov/knowtherisks.html>.

³² CDC, "Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students—United States, 2011-2018," *MMWR*, 67(45): 1276-1277. https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm?s_cid=mm6745a5_w.

³³ Sharapova, S, et al., "Age of tobacco use initiation and association with current use and nicotine dependence among US middle and high school students, 2014-2016," *Tobacco Control*, published online November 29, 2018.

³⁴ National Academies of Sciences, Engineering, and Medicine (NASEM), *Public Health Consequences of E-Cigarettes*, Washington, DC: The National Academies Press, 2018, <http://nationalacademies.org/hmd/Reports/2018/public-health-consequences-of-e-cigarettes.aspx>.

³⁵ University of Michigan, 2018 Monitoring the Future Study, *Trends in Availability – Tables 15-17*. See

<http://monitoringthefuture.org/data/18data/18drtbl15.pdf> and <http://monitoringthefuture.org/data/18data/18drtbl16.pdf>.

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