

# Tobacco and Nicotine

## Overview

### Death & Disease

Tobacco exposure is the leading preventable cause of death and disease in the United States (U.S.). Worldwide, tobacco use causes more than seven million deaths per year.<sup>1</sup> In the US alone, cigarette smoking is responsible for more than 480,000 deaths per year, including over 41,000 deaths resulting from secondhand smoke exposure. Tobacco therefore causes one in five deaths in the US annually, or 1,300 deaths every day.<sup>2</sup> In addition, more than 16 million Americans live with a disease caused by smoking. Smoking causes cancer, cardiovascular disease (CVD), stroke, diabetes, and lung diseases like chronic obstructive pulmonary disease (COPD), which includes emphysema and chronic bronchitis.<sup>3</sup>

Fourteen percent of all U.S. adults, or 34.3 million people, smoked cigarettes in 2017, a record low<sup>4</sup>. Smoking rates are different in various populations. For example, 15.8% of men smoke as compared to 12.2% of women. In the U.S., people living below the poverty level and people with lower levels of educational attainment have higher rates of cigarette smoking than the general population.<sup>5</sup> Smoking rates are higher among certain racial and ethnic groups, such as those identifying as mixed-race (20.6%) and American Indian/Alaska Native (24%).<sup>6</sup>

### Advertising & Subsidies

The tobacco industry heavily promotes this highly addictive substance. Tobacco companies spent \$9.36 billion on advertising and promotion of tobacco products in 2017. This amounts to more than \$25 million spent every day.<sup>7</sup> Price discounts to retailers account for 71.7% of all cigarette marketing or about \$6.19 billion. These are discounts paid to reduce the price of cigarettes to consumers, thus subsidizing their use. Tobacco companies target advertising towards low-income and minority communities, and researchers have found a higher density of tobacco retailers in low-income neighborhoods.<sup>8</sup> In comparison to the money spent on tobacco advertising, the U.S. Office of Smoking and Health (OSH), the lead federal agency for comprehensive tobacco prevention and cessation, had a budget of just \$210 million in 2019.<sup>9</sup>

Tobacco companies must also spend money on youth smoking prevention ads after a 2006 ruling in a court case brought by the U.S. Justice Department required them to do so. Altria, a spinoff from Phillip Morris, one of the world's largest tobacco producers, said in its 2016 annual filing that it expected actions related to the order to cost \$31 million.<sup>10</sup> However, groups like the Campaign for Tobacco-Free Kids have criticized these campaigns as intentionally ineffective. Studies have shown that the tobacco industry's anti-smoking ads can make smoking *more* appealing to kids by describing smoking as an 'adult choice,'<sup>11</sup> instead of focusing on the health risks of tobacco use.

The total economic cost of smoking in the U.S. alone is more than \$300 billion a year, including nearly \$170 billion in direct medical care for adults,<sup>12</sup> and more than \$156 billion in lost productivity due to premature death and exposure to secondhand smoke.<sup>13</sup> These costs could be reduced by preventing people from initiating smoking and helping current smokers quit. Unfortunately, nearly 2000 young people under the age of 18 smoke their first cigarette every day<sup>14</sup> - which is particularly concerning because 9 out of 10 adult cigarette smokers first try smoking by age 18.<sup>15</sup>

### Youth Nicotine Use & E-cigarettes

Cigarette smoking rates among U.S. youth declined over the last two decades and the cigarette smoking rate among teenagers is at a historic low.<sup>16</sup> However, the overall youth rate of nicotine use has remained unchanged thanks to the advent of electronic cigarettes (e-cigarettes). E-cigarettes are electronic devices that heat a liquid and produce an aerosol. They come in many shapes and sizes, but most have a battery,

a heating element, and a place to hold a liquid. Some e-cigarettes look like regular cigarettes or pipes, while others look like USB flash drives or pens. E-cigarettes are known by many different names, such as “e-cigs,” “e-hookahs,” “vapes,” and “electronic nicotine delivery systems (ENDS).” Using an e-cigarette is sometimes called “vaping” or “JUULing,” after the most popular brand of e-cigarettes in the U.S., JUUL.<sup>17</sup> One JUUL “pod,” or cartridge of nicotine liquid, contains as much nicotine as a pack of cigarettes. However, 63% percent of JUUL users aged 15-24 did not know that this product always contains nicotine.<sup>18</sup>

E-cigarette use among U.S. middle and high school students increased 900% during 2011-2015, before declining briefly during 2015-2017. E-cigarette use then increased 78% among high school students during 2018. 20.8% of all high school students used e-cigarettes in 2018. Frequent use (more than 20 days in the past 30 days) of e-cigarettes increased from 20 percent in 2017 to 28 percent in 2018 among high school e-cigarette users.<sup>19</sup> Following national smoking trends, more male high school students used e-cigarettes than female students. By race/ethnicity in 2018, e-cigarettes were the most commonly used product among all racial/ethnic groups except black high school students, among whom cigars were the most commonly reported product.<sup>20</sup>

Adolescents' nervous systems are particularly vulnerable to the addictive properties of nicotine, the primary habit-forming chemical contained within tobacco products.<sup>21</sup> Nicotine exposure can cause mood disorders and permanent lowering of impulse control in young people by changing the way synapses are formed in the brain.<sup>22</sup> Epidemiological data suggests this neurochemical vulnerability has grim consequences for public health in the U.S. - 75% of teenage smokers continue into adulthood.<sup>23</sup> In addition, using e-cigarettes has been found to increase the likelihood of smoking cigarettes among young people: U.S. youth are four times more likely to try cigarettes if they previously used e-cigarettes.<sup>24</sup>

E-cigarettes have been marketed as a less harmful alternative to cigarettes and as a cessation device for current adult smokers, even though they have not been authorized by the Food and Drug Administration (FDA) as such. Companies like JUUL have found themselves under federal scrutiny over reports that they marketed to children in health classes<sup>25</sup> and that they targeted youth on social media.<sup>26</sup> In the summer and fall of 2019, reports emerged of over 1000 people hospitalized across the U.S. with serious respiratory illnesses. Vaping was the common denominator among the patients.<sup>27</sup> Doctors from the Mayo Clinic compared the lung damage from vaping to that of an industrial chemical burn.<sup>28</sup> The CDC reported that about 70 percent of the patients were male, 80 percent under 35 years old and 16 percent younger than 18.<sup>29</sup> No single substance or brand has been shown to cause the illnesses. 77% of lung injury patients reported vaping tetrahydrocannabinol (THC), the main active ingredient of cannabis. 57% of patients reported vaping nicotine.<sup>30</sup> As of October 17, 2019, 33 vaping-related deaths had been reported in 24 states.<sup>31</sup>

### Secondhand Smoke

Secondhand smoke, a toxic mixture of more than 7,000 chemicals,<sup>32</sup> is smoke from the burning end of a tobacco product and the smoke breathed out by a smoker. Previous U.S. Surgeons General determined that there is no safe level of exposure to secondhand smoke, and people with heart and lung disease are at higher risk for health complications when exposed. Even brief exposure can trigger harmful changes in the cardiovascular system that increase the risk of heart attack or stroke. Secondhand smoke causes lung cancer, heart disease and stroke in non-smoking adults. Among babies and children, it causes sudden infant death syndrome, low birth weight, respiratory and ear infections, and more severe asthma attacks.

Secondhand smoke kills over 41,000 people in the U.S. each year, according to the Centers for Disease Control and Prevention (CDC). Worldwide, secondhand smoke kills more than 600,000 people each year.<sup>33</sup> Of those deaths, 47% occurred in women, 28% in children, and 26% in men<sup>34</sup> In terms of years of life lost, children are by far the most affected. Preventing exposure to secondhand smoke is therefore a critical public health priority.

## Federal Law

In 2009, President Barack Obama signed the Family Smoking Prevention and Tobacco Control Act (TCA) into law, giving the FDA authority to regulate the manufacturing, marketing, and sale of tobacco products for the first time. The FDA has subsequently taken a number of actions to protect people from the harms of tobacco by extending its regulatory authority to all tobacco products, including e-cigarettes, cigars, hookah, pipe tobacco, nicotine gels, and other products.<sup>35</sup>

## STS and Tobacco

The Society believes that cardiothoracic surgeons can encourage smoking cessation programs in their facilities and tobacco use prevention in their patients and communities. STS members are advised to speak with their patients about smoking cessation before any procedure. Quitting smoking before surgery reduces complications, and smoke-free hospital environments helps patients quit.<sup>36</sup> The Society provides several patient resources on the STS Patient Website, including a “Quit Smoking before Your Operation” guide and information on various quit lines that U.S. patients can call for assistance.

In addition to patient education, the Society advocates for smoking prevention and cessation and the regulation of tobacco products at the federal level. For a complete list of comments, visit [www.sts.org/advocacy/record](http://www.sts.org/advocacy/record).

In order to address the youth vaping epidemic, STS has endorsed bills that would raise the minimum legal sales age (MLSA) for all tobacco products from 18 to 21, and ban flavored e-cigarettes – including menthol – and online sales of tobacco products.

To address tobacco use at large and in specific populations, the Society has consistently supported increasing funding to OSH. STS has endorsed legislation that would reduce the nicotine level in cigarettes and e-cigarettes to non-addictive or minimally addictive levels, as well as a bill that would ban smoking on and in Veterans Health Administration (VHA) facilities and one that would encourage research into the discrepancy between rates of lung cancer in male and female non-smokers. Additionally, STS has endorsed various FDA actions, including: maintaining federal regulation of cigars; extending the marketing restrictions that FDA currently applies to cigarettes to all tobacco products, including e-cigarettes and cigars; prioritizing FDA enforcement of products that do not have a premarket application submitted by 2021; and approving authorized levels of user fees for all tobacco products for the FDA to oversee tobacco products. Finally, the Society endorsed creating new ICD-10 codes to capture patient use of e-cigarettes and other new tobacco products, such as the Altria iQOS, coming onto the market.

In January 2009, STS adopted a Declaration on Tobacco Control, which stated:

The consumption of tobacco products and exposure to tobacco smoke lead the world’s list of preventable causes of death, responsible for about 5 million deaths a year. It is estimated that this number will grow to 10 million by 2030. Smoking causes approximately 90% of lung cancer and contributes to 30% of all cancers. It is the major cause of chronic obstructive lung disease and one of the major risk factors for vascular disease, including ischemic heart disease. Programs to prevent initiation of smoking have an important long-term positive impact on tobacco-related illnesses, and individual efforts to stop smoking can mitigate many of the negative health effects of tobacco use within just a few years.

The Society believes that cardiothoracic surgeons are in a position to provide the impetus for smoking prevention programs and for tobacco use cessation in their patients and communities, both locally and globally. To achieve the shared goal of eliminating morbidity and mortality from smoking-related activities, The Society of Thoracic Surgeons supports the following efforts:

1. Ratification of the [Framework Convention on Tobacco Control](#) and implementation of its articles, as important steps toward addressing tobacco-related disease in the United States and worldwide;

2. Legislation and regulations that prohibit smoking in public places and places of work, as important tools to decrease exposure to tobacco smoke and encourage smoking cessation;
3. Education, as a valuable and essential weapon in the effort to eliminate tobacco-related death and disease, including early tobacco warning programs within the school systems, more graphic and visible warnings on tobacco packaging, and the prohibition in advertising or marketing of misleading terms such as “light” and “low tar;”
4. Elimination of incentives and subsidies that support the production of tobacco-related products; and
5. Referral of patients to smoking cessation programs by Society members, who also should avail themselves of such programs if necessary.

## STS Position on Tobacco Policy

STS is pursuing the following public policy options that may help address tobacco and nicotine use among adult and youth populations:

### Support funding for cessation & prevention programs

It is imperative for the government to fund cessation and smoking prevention programs. STS supports full funding for OSH, which conducts research on tobacco use, provides grants to support tobacco prevention and cessation programs, and runs an effective public education campaign called Tips from Former Smokers. From 2012–2018, the CDC estimates that more than 16.4 million people who smoke have attempted to quit and approximately one million have quit for good because of the Tips campaign.<sup>37</sup> Boosting OSH’s budget by \$100 million (from \$210 million) will allow it to address the epidemic of youth e-cigarette use while continuing to help people quit smoking cigarettes.

### Support legislative and regulatory efforts to address the youth e-cigarette epidemic

Interventions to reduce or eliminate tobacco use in young adults are critical, especially since studies have shown that young e-cigarette users are more likely than nonusers to start smoking combustible cigarettes. STS strongly supports raising the minimum legal sales age (MLSA) for tobacco from 18 to 21. STS also supports the reduction of the nicotine content of tobacco products to non-addictive levels and the elimination of all flavored tobacco products, including menthol. Studies have shown that over 70% of underage e-cigarette users point to flavors as a main reason they use the products.<sup>38</sup> The Trump Administration proposed a ban on all flavored e-cigarettes, including menthol and mint, in September 2019. The FDA may finalize a compliance policy to clear the market of unauthorized flavored e-cigarette products.

STS supports maintaining the FDA’s authority to regulate all tobacco products, including cigars, e-cigarettes, and heated tobacco products that are just entering the U.S. market.

### Support efforts to make all public spaces in the US smoke-free

States can enact and enforce smoke-free laws in workplaces and public places. Twenty-eight states and the District of Columbia have passed comprehensive smoke-free laws. In order to protect the health of all Americans, all 50 states must pass laws prohibiting smoking in all public places and workplaces, including all restaurants, bars and casinos.<sup>39</sup> Studies have shown that smoke-free laws help improve the health of workers and the general population, quickly reducing hospital admissions for heart attacks.<sup>40</sup> Currently, 22 states do not ban secondhand smoke in all public spaces and workplaces. This means many U.S. employees face secondhand smoke exposure in order to do their job, which is unacceptable.

Most hospitals in the U.S. are smoke-free. STS supports Congressional codification of the VHA’s decision to bring their facilities in line with the private sector by banning smoking on campuses, thus protecting the health of veterans. Veterans are 25% more likely to be diagnosed with lung cancer than civilians. Besides lung cancer, many veterans suffer from COPD, hypertension, and coronary artery disease, all of which are exacerbated by secondhand smoke.

In addition to laws that apply to cigarette smoke, STS also supports efforts to ban vaping in public places. In 2016, the U.S. Surgeon General concluded that e-cigarette aerosol is not benign and can contain harmful chemicals. Eleven states and the District of Columbia have added e-cigarettes to their smoke-free laws. Per the World Health Organization (WHO) Framework Convention on Tobacco Control,<sup>41</sup> STS strongly supports the adoption and implementation of effective legislative, executive, administrative and/or other measures, providing for protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places and other public places.

#### Divestment from the Tobacco Industry

Due to the harm caused by tobacco, both in the U.S. and globally, The Society of Thoracic Surgeons endeavors to no longer hold stock in, or mutual funds that include, companies that produce cigarettes or other tobacco products. (Adopted by the STS Board of Directors on January 26, 2020)

#### STS Declaration on U.S. Tobacco Control

The consumption of tobacco products and exposure to tobacco smoke lead the world's list of preventable causes of death, responsible for about 7 million deaths a year. In the United States, cigarette smoking and exposure to tobacco smoke causes about 480,000 premature deaths each year. Of those premature deaths, about 36% are from cancer, 39% are from heart disease and stroke, and 24% are from lung disease.<sup>42</sup> Tobacco is the major cause of chronic obstructive lung disease and one of the major risk factors for vascular disease, including ischemic heart disease. Programs to prevent initiation of smoking have an important long-term positive impact on tobacco-related illnesses, and individual efforts to stop smoking can mitigate many of the negative health effects of tobacco use within just a few years. Smoking cessation during treatment for diseases such as COPD, CVD, and cancer improves patient outcomes.

The Society believes that cardiothoracic surgeons are in a position to help create smoking cessation programs in their facilities and encourage tobacco use cessation in their patients and communities, both locally and globally. To achieve the shared goal of eliminating morbidity and mortality from smoking-related activities, The Society of Thoracic Surgeons supports the following efforts:

1. Ratification of the World Health Organization [Framework Convention on Tobacco Control](https://www.who.int/fctc/text_download/en/) ([https://www.who.int/fctc/text\\_download/en/](https://www.who.int/fctc/text_download/en/)) and implementation of its articles, as important steps toward addressing tobacco-related disease in the United States and worldwide. The U.S. signed but did not ratify the Convention;
2. Legislation/regulation that prohibits smoking in public places and places of work, including e-cigarettes and other inhaled tobacco products;
3. Education, as a valuable and essential weapon in the effort to eliminate tobacco-related death and disease, including early tobacco warning programs within school systems, and more graphic and visible warnings on tobacco packaging;
4. Legislation that raises the minimum legal sale age (MLSA) for all tobacco products from 18 to 21;
5. Legislation/regulation that requires all tobacco product manufacturers to pay user fees to the FDA;
6. Legislation/regulation that bans all flavored tobacco products, including menthol;
7. Legislation/regulation eliminating tobacco product subsidies;
8. Legislation/regulation increasing taxation on all tobacco products;

9. Referral of patients to smoking cessation programs by Society members, who also should avail themselves of such programs if necessary; and
10. STS Divestment of assets in the tobacco industry.

*Adopted: January 26, 2020 (STS Board of Directors)*

<sup>1</sup> World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2011*. Geneva: World Health Organization, 2011

<sup>2</sup> U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*. 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, 2014

<sup>3</sup> "Fast Facts," Smoking & Tobacco Use, Centers for Disease Control and Prevention, 2/6/2019, [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/fast\\_facts/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm)

<sup>4</sup> Angelica LaVito, "CDC says smoking rates fall to record low in US," CNBC, 11/8/2018, <https://www.cnbc.com/2018/11/08/cdc-says-smoking-rates-fall-to-record-low-in-us.html>

<sup>5</sup> The Health Consequences of Smoking - 50 Years of Progress: A report of the Surgeon General.

<sup>6</sup> "Current Cigarette Smoking Among U.S. Adults Aged 18 Years and Older," Burden of Tobacco Use in the U.S., Tips from Former Smokers, Centers for Disease Control and Prevention, 2/25/2019, <https://www.cdc.gov/tobacco/campaign/tips/resources/data/cigarette-smoking-in-united-states.html>

<sup>7</sup> "Fast Facts"

<sup>8</sup> "Cigarette Smoking and Tobacco Use Among People of Low Socioeconomic Status," Smoking & Tobacco Use, CDC, 3/7/2018, <https://www.cdc.gov/tobacco/disparities/low-ses/index.htm>

<sup>9</sup> "Office on Smoking and Health at a Glance," National Center for Chronic Disease Prevention and Health Promotion, CDC, 5/25/2019, <https://www.cdc.gov/chronicdisease/resources/publications/aag/tobacco-use.htm>

<sup>10</sup> "United States Securities and Exchange Commission Form 10-K for Altria Group, Inc." <http://services.corporate-ir.net/SEC/Enhanced/SecCapsule.aspx?c=80855&fid=14852383>

<sup>11</sup> "Big Surprise: Tobacco Company Prevention Campaigns Don't Work," Campaign for Tobacco-Free Kids, 3/9/2019, <https://www.tobaccofreekids.org/assets/factsheets/0302.pdf>

<sup>12</sup> Federal Trade Commission. *Federal Trade Commission Smokeless Tobacco Report for 2017.pdf*. Washington: Federal Trade Commission, 2019

<sup>13</sup> The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General

<sup>14</sup> "Office on Smoking and Health (OSH)," Smoking & Tobacco Use, CDC, 3/8/2019, <https://www.cdc.gov/tobacco/about/osh/index.htm>

<sup>15</sup> "Youth and Tobacco Use," Smoking & Tobacco Use, CDC, 11/8/2019, [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/youth\\_data/tobacco\\_use/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/youth_data/tobacco_use/index.htm)

<sup>16</sup> "Vital Signs: Tobacco Product Use Among Middle and High School Students – United States, 2011–2018," Morbidity and Mortality Weekly Report, CDC, 2/14/2019, [https://www.cdc.gov/mmwr/volumes/68/wr/mm6806e1.htm?s\\_cid=osh-vs-mmwr-full-001](https://www.cdc.gov/mmwr/volumes/68/wr/mm6806e1.htm?s_cid=osh-vs-mmwr-full-001)

<sup>17</sup> "Quick Facts on the Risks of E-cigarettes for Kids, Teens, and Young Adults," Smoking & Tobacco Use, CDC, 3/11/2019, [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/Quick-Facts-on-the-Risks-of-E-cigarettes-for-Kids-Teens-and-Young-Adults.html)

<sup>18</sup> "Juul e-cigarettes gain popularity among youth, but awareness of nicotine presence remains low," truth initiative, 4/18/2018, <https://truthinitiative.org/press/press-release/juul-e-cigarettes-gain-popularity-among-youth-awareness-nicotine-presence>

<sup>19</sup> "Surgeon General's Advisory on E-cigarette Use Among Youth," Smoking & Tobacco Use, CDC, 4/9/2019, [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/surgeon-general-advisory/index.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/surgeon-general-advisory/index.html)

<sup>20</sup> <https://www.cdc.gov/media/releases/2019/p0211-youth-tobacco-use-increased.html>

<sup>21</sup> "The Health Consequences of Smoking – 50 Years of Progress," A REPORT OF THE SURGEON GENERAL, CH. 12 p. 659 (2014), <http://www.surgeon-general.gov/library/reports/50-years-of-progress/index.html>.

<sup>22</sup> "Progress Erased: Youth Tobacco Use Increased During 2017-2018," CDC Newsroom, CDC, 2/11/2019, <https://e-cigarettes.surgeongeneral.gov/knowtherisks.html>

<sup>23</sup> Calculated by the Campaign for Tobacco-Free Kids based on data in the National Survey on Drug Use and Health (2016), U.S. Dep't of Health and Human Services. Substance Abuse and Mental Health Services Administration. Ctr. for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health (2016); David Hammond, Smoking Behaviour Among Young Adults: Beyond Youth Prevention, 14 *Tobacco Control* 181 – 5 (2005); Paula M. Lantz, Smoking on the Rise Among Young Adults: Implications for Research and Policy, 12 *TOBACCO CONTROL* (Suppl 1) i60 – i70 (2003).

<sup>24</sup> "E-cigarettes: Facts, stats and regulations," Fact Sheet, truth initiative, 11/11/2019, <https://truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations>

<sup>25</sup> Sheila Kaplan, "Juul targeted schools and youth camps, House panel on vaping claims," The New York Times, 7/25/2019, <https://www.nytimes.com/2019/07/25/health/juul-teens-vaping.html>

<sup>26</sup> Kathleen Chaykowski, "The Disturbing Focus of Juul's Early Marketing Campaigns," Forbes, 11/16/2018, <https://www.forbes.com/sites/kathleenchaykowski/2018/11/16/the-disturbing-focus-of-juuls-early-marketing-campaigns/#65e02ccb14f9>

<sup>27</sup> Sheila Kaplan, "Vaping Sicknesses Rising," The New York Times, <https://www.nytimes.com/2019/08/21/health/vaping-marijuana-e-cigarettes.html>

<sup>28</sup> Denise Grady, "Lung Damage from Vaping Resembles Chemical Burns," The New York Times, 10/2/2019, <https://www.nytimes.com/2019/10/02/health/vaping-illnesses.html>

<sup>29</sup> Denise Grady, "Vaping Illness Top 1000," The New York Times, 10/3/2019, <https://www.nytimes.com/2019/10/03/health/vaping-illnesses-cdc.html>

<sup>30</sup> Jonathan Corum, "Vaping Illness Tracker," The New York Times, 11/20/2019, <https://www.nytimes.com/interactive/2019/health/vaping-illness-tracker.html>

<sup>31</sup> "Outbreak of Lung Injury Associated with E-cigarette Use, or Vaping," Smoking & Tobacco Use, CDC, 11/19/2019, [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/severe-lung-disease.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)

<sup>32</sup> "U.S. State and Local Issues: Smoke-Free Laws," Campaign for Tobacco-Free Kids, 6/4/2019, <https://www.tobaccofreekids.org/what-we-do/us/smoke-free-laws>

<sup>33</sup> "Worldwide burden of disease from exposure to second-hand smoke," Quantifying Environmental Health Impacts, World Health Organization, [https://www.who.int/quantifying\\_ehimpacts/publications/shsarticle2010/en/](https://www.who.int/quantifying_ehimpacts/publications/shsarticle2010/en/)

<sup>34</sup> Ibid

<sup>35</sup> "The Facts on the FDA's New Tobacco Rule," U.S. Food & Drug Administration, 6/16/2016, <https://www.fda.gov/consumers/consumer-updates/facts-fdas-new-tobacco-rule>

<sup>36</sup> "Quit Smoking Before Your Operation," Surgical Patient Education Program, STS.org, <https://www.sts.org/sites/default/files/quitsmoking.pdf>

<sup>37</sup> "The Burden of Tobacco Smoking," About the Campaign, Tips from Former Smokers, CDC, 2/6/2019, [https://www.cdc.gov/tobacco/campaign/tips/about/index.html?s\\_cid=OSH\\_tips\\_D9393](https://www.cdc.gov/tobacco/campaign/tips/about/index.html?s_cid=OSH_tips_D9393)

<sup>38</sup> "Flavored Tobacco Products Attract Kids," Campaign for Tobacco-Free Kids, 11/7/2019, <https://www.tobaccofreekids.org/assets/factsheets/0383.pdf>

<sup>39</sup> "Smokefree Air Laws," Tobacco, American Lung Association, 3/8/2019, <https://www.lung.org/our-initiatives/tobacco/smokefree-environments/smokefree-air-laws.html>

<sup>40</sup> "Smokefree Policies Improve Health," Smoking & Tobacco Use, CDC, 1/17/2018, [https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/secondhand\\_smoke/protection/improve\\_health/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/protection/improve_health/index.htm)

<sup>41</sup> "WHO Framework Convention on Tobacco Control," 2003, [https://www.who.int/ctc/text\\_download/en/](https://www.who.int/ctc/text_download/en/)

<sup>42</sup> "Harms of Cigarette Smoking and Health Benefits of Quitting, About Cancer, National Cancer Institute, 12/19/2017, <https://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco/cessation-fact-sheet>