



To: Contra Costa Board of Supervisors

From: Daniel Peddycord, Director of Public Health
Suzanne Tavano, Director of Behavioral Health
Jocelyn Stortz, Director of Environmental Health
Matt Kauffman, Director of Hazardous Materials

Re: Staff Report on considerations related to Cannabis Health Ordinance 2018-23

Date: May 18, 2021

I. Background

On July 11th, 2017, Tobacco Control Ordinance No. 2017-01 was introduced to the Board of Supervisors and subsequently adopted on July 18th, 2017 to ban the sale of electronic smoking devices and flavored tobacco products in proximity to youth sensitive areas.

On July 18, 2017, the Board of Supervisors received a report on local policy and regulatory considerations in the wake of voter approved Proposition 64 (Prop 64), which legalized adult recreational use of marijuana.

On April 24th, 2018, the Board of Supervisors accepted the staff report from the Department of Conservation and Development and approved the final draft of a framework for regulating cannabis in the unincorporated areas of the County. Staff was directed to prepare a land use ordinance based on the framework and subsequent discussion. Additionally, the Board directed Contra Costa Health Services to provide a report at the May 8th, 2018 Board meeting, to consider recommendations related to the drafting of a cannabis Health Ordinance for the purpose of further regulating the commercial cannabis industry in the Unincorporated areas of the County.

On May 8, 2018, the Board of Supervisors accepted the Contra Costa Health Services' staff report with recommendations for a health ordinance to regulate commercial activity associated with recreational adult use cannabis. It was recommended to: Prohibit the sale of flavored leaf, bud, e-juices or any other product that is designed for smoking or use with electronic smoking devices. This was one of several recommendations made to protect youth from exposure to and use of an emerging line of products, electronic smoking devices (vapes) as well as the flavored tobacco products associated with the use of these devices. There had been a dramatic increase in the use of vaping products by youth attracted to flavored tobacco products, as addressed in Ordinance No. 2017-01, referenced above. The Board directed staff to prepare a cannabis health ordinance for the Board's consideration that, among other health protections would include a prohibition on the sale or delivery of flavored cannabis products for which the primary use is to be smoked or used in electronic smoking devices.

On May 24, 2018 Ordinance No. 2018-23 was introduced to require a county health permit for commercial cannabis activities, WAIVE reading, and FIX August 7, 2018, for adoption. Consistent with the County's tobacco control ordinance, the ordinance prohibits the sale or delivery of flavored cannabis products for which the primary use is to be smoked or used in electronic smoking devices. Adopting this local health ordinance additionally authorized county staff to inspect, regulate and enforce appropriate state and local laws pertaining to the cannabis industry.

Health Ordinance 2018-24 Summary:

The Commercial Cannabis Health Permit Ordinance required all persons engaged in commercial cannabis activities in the unincorporated county to obtain a county health permit in addition to all other licenses and permits required by the County and the State.

The ordinance establishes general health standards that apply to all commercial cannabis activities including standards that specifically pertains to manufacturing (e.g., the use of volatile solvents is prohibited), retail sale (e.g., transaction limits on edible cannabis products, requirements for consumer warnings), and retail delivery (e.g., delivery employees are required to examine government-issued identification cards upon delivery). In addition, and consistent with the County's tobacco control ordinance, the ordinance would also prohibit the sale or delivery of flavored cannabis products for which the primary use is to be smoked or used in electronic smoking devices.

On November 12th, 2019 ORDINANCE NO. 2019-34 was introduced and subsequently adopted amending three sections of County code to bring alignment between County Tobacco Control Policy and Cannabis regulation to prohibit as follows:

(g) The sale of any flavored cannabis product for which the primary use is human inhalation of the gases, particles, vapors, or byproducts released as a result of combustion, electrical ignition, or vaporization of the flavored cannabis product, is prohibited.

(h) A permittee shall not sell, permit to be sold, offer for sale, or display for sale any cannabis or cannabis product by means of self-service display, vending machine, rack, counter-top, or shelf that allows self-service sales for any cannabis or cannabis product. All cannabis and cannabis products must be offered for sale only by means of permittee or employee Assistance.

(i) The sale of any electronic smoking device that contains tetrahydrocannabinol or any other cannabinoid, or can be used to deliver tetrahydrocannabinol or any other cannabinoid in aerosolized or vaporized form, is prohibited. For purposes of this subsection, "electronic smoking device" has the meaning set forth in Section 445-2.006. This subsection does not apply to any device regulated by the federal Family Smoking Prevention and Tobacco Control Act.

(j) The sale of any e-liquid that contains tetrahydrocannabinol or any other cannabinoid is prohibited. For purposes of this subsection, "e-liquid" has the meaning set forth in Section 445-2.006. This subsection does not apply to any substance regulated by the federal Family Smoking Prevention and Tobacco Control Act. (Ords. 2019-34 § 4, 2018-23 § 2.)

Summary of Ordinance No. 2019-34

Prohibit the sale of vaping products and implements the Family and Human Services Committee's further recommendations regarding flavored tobacco products.

Amends Division 445
(Secondhand Smoke and Tobacco
Product Control)

Prohibit the sale of any electronic smoking device or e-liquid that is required to obtain, but has not yet obtained, a premarket review order from the U.S. Food and Drug Administration

Amends Chapter 413-4
(Commercial Cannabis Health Permits)

Prohibit the sale or delivery of any e-liquid that contains tetrahydrocannabinol or any other cannabinoid, and to prohibit the sale or delivery of any electronic smoking device that can be used to deliver tetrahydrocannabinol or any other cannabinoid in aerosolized or vaporized form.

Amends Section 445-6.006
(Secondhand Smoke and Tobacco Product
Control)

Prohibit the sale of flavored tobacco products and menthol cigarettes. Currently, the sale of these products is only prohibited within 1,000 feet of a public or private school, playground, park, or library. The proposed ordinance will make the prohibition effective in all of the unincorporated County.

In light of the newness of regulating the commercial cannabis industry and the evolving landscape of cannabis regulation, Contra Costa Health Services recommended a cautionary approach to local regulation that emphasizes protections for consumers, the public, and at-risk groups such as youth and individuals challenged with substance use disorders.

Throughout the remainder of this report, we will refer to cannabis and marijuana interchangeably as well as refer to vape and e-cigarette devices interchangeably.

II. Summary of Health Benefits and Health Concerns:

Over the course of the 10 months preceding the adoption of Health Ordinance 2018-24 the Board heard testimony and was provided with various articles, reports and research from both the public and staff related to the health benefits and concerns of cannabis. Individuals and coalitions from both sides of the debate were passionate in their convictions.

In June 2014 an article (attached to May 24th, 2018 staff report) was published in the *New England Journal of Medicine* related to the Adverse Health Effects of Marijuana Use. However, the article also recognized some of the clinical conditions to which the use of cannabinoids may be beneficial. Those conditions include, Glaucoma, Nausea, AIDS- associated anorexia and wasting syndrome, chronic pain, inflammation, multiple sclerosis and epilepsy.

Conversely the article emphasized that there are also numerous adverse effects of marijuana use including: risk of addiction, clear evidence of negative effects of brain development, effect on school performance and lifetime achievement, possible role as a gateway drug, relationship to mental illness – including, anxiety, depression and schizophrenia, and clear association with increased risk of motor vehicle accidents. The article also discussed association with cancer and cardio-vascular disease, including stroke, hypertension and myocardial infarction. The article also discussed the gaps in knowledge as to the full effects on nursing and pregnant mothers and their unborn child. Contra Costa Health Services recommends an abundance of caution and that all nursing and pregnant women be informed of the potential risk of harm and to be advised to avoid the use of cannabis during their pregnancy and while nursing. It is also important to note that the article cited that some 1 in 6 or approximately 17% of teens who experiment with cannabis will become addicted to its use as many as 50% of adult daily users.

Additionally, recent article published by the *National Institute On Drug Abuse* in August 2019, concluded that “prenatal [cannabis use disorder] was associated with major adverse neonatal outcomes, including greater odds of small for gestational age, preterm birth, low birth weight, and death within 1 year of birth.”

It is from this cautionary approach and emerging scientific evidence, that Contra Costa Health Services recommended many of the specific health regulations designed to help protect youth, and other sensitive populations from the potential adverse effects of cannabis use.

Subsequent to the adoption of Health Ordinance 2018-23 and in light of the progress made to initiate the required permitting process related to cannabis retail specific questions have been raised regarding the prohibition on the sale and delivery of flavored cannabis products for which the primary use is to be smoked or used in electronic smoking devices.

III. Considerations related to the prohibition on the sale of electronic smoking devices and related flavored products:

Trends In Vaping and Cannabis

1. This overlap between tobacco and cannabis products has led to a broader definition of the term “vaping”, expanding it from just tobacco to include inhaling cannabis products.
2. Vaping devices are considered tobacco products under California law, whether used to consume nicotine, cannabis, or other substances.
3. Increasing and limitless concentrations of nicotine and tetrahydrocannabinol (THC) in tobacco and cannabis products influence use and dependence; 97% of youth who vape use flavored products (Rostron, B., Cheng, Y., Gardner, L., Ambrose, B., 2020)
4. Vaping products are the most concerning of the cannabis products, because they involve inhaling a wide array of unknown and untested substances into the lungs. Unknown substances or ‘foreign materials’, as defined by Bureau of Cannabis Control (Bureau of Cannabis Control Emergency Regulations June 2018 Page 79) are a huge cause for concern. With a bulk batch testing system, an array of unknown and untested foreign material can get into vaping liquids.
5. It is imperative that CDPH develop a product-by-product approval system, like that of the FDA’s premarket approval process for all tobacco products. For example, Vitamin E acetate was the most commonly detected substance, but it was not present in many samples from EVALI patients, suggesting that other factors were also at work. While BCC licenses manufacturers and has certain testing and other standards for products. These current standard fails to adequately address key vaping safety issues related to inhalation of unknown substances/foreign materials.
6. The Triangulum between tobacco, cannabis, and electronic smoking devices has increased the use and co-use of cannabis and tobacco products. As the use of e-cigarettes has increased in popularity, so has the use of cannabis through vapingⁱ. California youth now use e-cigarettes more than cigarettes (10.9 percent vs. 2.0 percent in 2017-2018), with cannabis use higher than overall tobacco use (14.7 percent vs. 12.7 percent)ⁱⁱ.
7. After years of seeing positive trends in the reduction in youth tobacco use, the introduction of electronic smoking devices dramatically changed this trajectory. At the National Level the 2019 Monitoring the Future Survey (MTFS) reported a significant increase in Nicotine Vaping and THC vaping indicated that THC vaping among 12th graders is the second largest increase for any substance within the 45 years of the MTFS.

8. There is a strong positive correlation between tobacco use and cannabis useⁱⁱⁱ. Co-use, dual use, poly use, and sequential use have become common^{iv}, exacerbated by the widespread availability of vaping devices for both tobacco and cannabis, including some that can be used with multiple substances. 790,000 California adolescents had reported past-30-day co-use of tobacco and cannabis. Past 30-day co-use of tobacco and cannabis was greater than tobacco use alone. Cannabis is widely viewed as harmless and consistently perceived as more socially acceptable and less risky than tobacco. Moreover, youth perceive e-cigarettes rated as least risky (Nguyen et al., 2019).
9. A meta study published in the August 12th, 2019 Journal of American Medicine Pediatrics found a strong association between the use of e-cigarettes and higher rates of cannabis use among youth. The study found that youth who used e-cigarette were 3.5x more likely to use cannabis than non-e-cigarette users (21 independent studies were reviewed). The findings suggested that regulatory approach addressing e-cigarette use by youth should consider the significant association with subsequent marijuana use. Additionally, the study found that the use of electronic smoking devices was often the first method by which youth are introduced to a psychoactive substance (cannabis).
10. Cannabis vaping at any level was associated with increased odds of bronchitis symptoms, and cannabis vaping 3 or more times in the last month was associated with increased odds of wheeze, even after simultaneously adjusting for nicotine vaping, cigarette smoking, and combustible cannabis use^v.
11. In a 2017 American Medical Association article by renowned researcher Stanton Glantz and colleagues it was noted that nationally in 2016 more adolescents used marijuana than tobacco; 25% vs. 11% for high school seniors; 16% vs. 5% for high school sophomores. Further the article noted that other than nicotine and cannabinoids that tobacco and marijuana smoke are similar and that the California Environmental Protection Agency has identified marijuana smoke as human carcinogen based on the smoke's toxicology.
12. On August 9th of 2019, the California Department of Public Health (CDPH) issued a Health Alert related to Severe Acute Pulmonary Disease associated with vaping cannabis/cannabidiol oil - EVALI (e-cigarette or vaping associated lung injury). According to the CDC, 82% reported using THC-containing products (January 14, 2020) Nationwide, 50% of EVALI patients who reported using THC-containing products provided data on product source (as of January 7, 2020):

Update of EVALI Health Crisis

Summary of EVALI Statistics From CDC: As of February 18, 2020, a total of 2,807 hospitalized e-cigarette, or vaping, product use-associated lung injury (EVALI) cases or deaths have been reported to CDC from 50 states, the District of Columbia, and two U.S. territories (Puerto Rico and U.S. Virgin Islands).

- Sixty-eight deaths have been confirmed in 29 states and the District of Columbia (as of February 18, 2020), including 4 in California.
- Among the 2,668 hospitalized EVALI cases or deaths reported to CDC (as of January 14, 2020):
- 66% were male
 - The median age of deceased patients was 49.5 years and ranged from 15-75 years (as of February 18, 2020).
 - The median age of patients was 24 years and ranged from 13–85 years.
 - By age group category:
 - 15% of patients were under 18 years old;
 - 37% of patients were 18 to 24 years old;
 - 24% of patients were 25 to 34 years old; and
 - 24% of patients were 35 years or older.

Type of Products Used: 2,022 hospitalized patients had data on substance use, of whom (as of January 07, 2020):

- **82% reported using THC-containing products;** 34% reported exclusive use of THC-containing products.

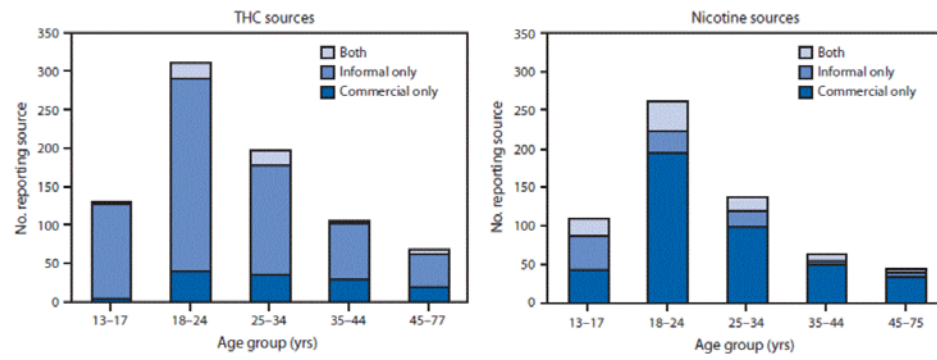
- 57% reported using nicotine-containing products; 13% reported exclusive use of nicotine-containing products.

Product Source for THC- containing Products: (See Figure 1)

50% of EVALI patients who reported using THC-containing products provided data on product source (as of January 7, 2020):

- **16% reported acquiring products only from commercial sources** (recreational and/or medical dispensaries, vape or smoke shops, stores, and pop-up shops).
- **6% reported acquiring products from both commercial and informal sources.**
- 78% reported acquiring products only from informal sources (family/friends, dealers, online, or other sources).

FIGURE 1. Reported product sources,*,†,§ by age group, ¶,, among hospitalized e-cigarette, or vaping, product use-associated lung injury (EVALI) patients — United States, August 2019–January 2020**



- One limitation of the CDC investigation is that **data on product source was missing for 50% of THC-containing product users**. CDC continues to recommend that the best way for persons to ensure that they are not at risk is to consider refraining from the use of all e-cigarette, or vaping products.

Causative Research:

Research published in the *New England Journal of Medicine* (Feb 20, 2020), found Vitamin E-acetate in the bronchoalveolar-lavage fluid of 48 of 51 (94%) EVALI patients studied. Of these patients THC was detected in 94% and Nicotine in 64% <https://www.nejm.org/doi/full/10.1056/NEJMoa1916433>

13. Multiple cases were cited in California and across the nation with patients in acute reciprocity distress requiring hospitalization. CDPH has continues to monitor EVALI cases and from August 2019 to February 2020 CDPH identified 210 EVALI cases which included 4 deaths. Many of these cases were associated with vaping of THC from unlicensed sources. In May 2020 CDPH received reports from 5 California jurisdictions of 8 EVALI cases that were hospitalized in April 2020. The median age of the 8 patients was 17, all had tested negative for SARS –CoV-2 (the virus that causes COVID-19) and reported having recently vaped THC. CDPH advisories continue to state that e-cigarette use, or vaping is hazardous to your health and urge everyone to quit vaping no matter the substance or source vi.
14. Several studies have found associations between cannabis vaping and respiratory issues among youth. A recent University of Michigan study using a national probability sample over 14,000 adolescents (12-17 years of age) found that youth who vape cannabis are at roughly 2 times greater risks for respiratory symptoms indicative of lung injury than teens who smoke cigarettes or cannabis, or vape nicotine (Boyd, et al. 2021).

15. Another example is a 2020 cross-section study by Braymiller et al., published in the Journal of the American Medical Association which found an association between levels of cannabis vaping and symptoms of bronchitis. The study found that cannabis vaping at any level of use was associated with increased odds of bronchitis symptoms with a stronger association found for use on 1 to 2 days in the past 30 days.
16. It is relevant to note that vaping introduces ultra-fine particles into the lung, that are significantly smaller, and potentially more harmful than the 2.5microns often associated with extremely poor air quality.
17. Information from the 2017-2019 California Healthy Kids Survey, Marijuana Use Among California Secondary Student Report reveal concerning trends in youth use of cannabis and associated vaping products. Over 16% of 11th graders indicated they had used cannabis in the past 30 days and 84% of those users had vaped cannabis through an electronic smoking device.

Additional California specific data is as follows:

- a. Among 11th graders' methods of current cannabis consumption, 92% reported ever smoking cannabis, 78% vaping, and 73% oral ingestion. Over half (58%) had consumed cannabis using all three methods. Percentages for each and every method were higher for Frequent Users' than Infrequent.
- b. Consistent with these results, percentages of 11th graders reporting *ever* using a vaping device in general increased by frequency of current cannabis use, reported by 76% of Frequent Users, 72% of Infrequent Users. Current use of vaping devices (30-day) is also highly concentrated among marijuana users and was related to use frequency. Any use of a vaping device occurred among 56% of Frequent Cannabis Users and 45% of Infrequent Users. Daily vaping was reported by 17% of Frequent Users, 5% of Infrequent Users. Cannabis was the most popular substance for vaping by both *Frequent and Infrequent users*, but especially among the Frequent Users, 77% of whom reported ever having vaped it, compared to 58% of Infrequent Users. Vaping of cannabis greatly exceeded use of nicotine or a tobacco product among current users (69% vs. 39%).
- c. Use patterns are strongly related to perceptions of cannabis availability. Seven-in ten (72%) Frequent Users and 66% of Infrequent Users thought it was very easy to get marijuana, compared to 41% of Nonusers. All youth reported that marijuana was easier to obtain than alcohol.
- d. Cannabis remains readily available to youth; 10% of 7th graders, 32% of 9th graders, and almost half (46%) of 11th graders in California reported it is very easy to get. Although the major usual sources reported for obtaining it were peer networks, 5% of 7th graders, 12% of 9th graders and 19% of 11th graders identified marijuana dispensaries as a source of where kids who use marijuana usually get it.

Contra Costa County Specific Data:

The California Healthy Kids Survey 2017- 2019 Contra Costa County data reveal:

- a. 18% of 11th graders surveyed reported current use of cannabis; 10% of 11th graders surveyed reported three or more days of cannabis use the past 30 days.
- b. 31% of 11th graders indicated they had ever used cannabis. 25% of 11th graders reported ever using an e-cigarette or vape device to consume cannabis, while 27% reported ever smoking cannabis.
- c. Among students in Contra Costa County's non-traditional schools, an even greater percentage, 41%, of all students surveyed reported current cannabis use; 31% of students surveyed reported using cannabis three or more days in the past 30 days.
- d. 58% of youth surveyed in Contra Costa's non-traditional schools reported ever using cannabis, and 46% of youth surveyed reported ever using an e-cigarette or vaping device to consume cannabis.

Contra Costa County School District – Acalanes Union District Level Data 2019-2020 [1] data reveal:

- a. 25% of 11th graders surveyed reported current use of cannabis.
- b. 32% of 11th graders reported they had ever vaped cannabis and 30% reported they had ever vaped tobacco.
- c. While the major usual sources reported for obtaining marijuana were peers and parties, 10% of 9th graders surveyed and almost one-third (31%) of 11th graders surveyed, identified marijuana dispensaries as a source of where kids who use marijuana usually get it.

Psycho-Social Impact

Related to the cognitive harms of cannabis use by youth, Hammond, et al, published findings in the *International Review of Psychiatry* 2020, as follows:

- a. Cannabis remains the most used federally illicit psychoactive drug by U.S. adolescents and is the main drug for which U.S. youth present for substance use treatment. Converging evidence indicates that adolescent-onset cannabis exposure is associated with shorthand possibly long-term impairments in cognition, worse academic/vocational outcomes, and increased prevalence of psychotic, mood, and addictive disorders. Odds of negative developmental outcomes are increased in youth with early-onset, persistent, high frequency, and high potency D-9-THC cannabis use, suggesting dose-dependent relationships.
- b. Cannabis Use Disorders are treatable conditions with clear childhood antecedents that respond to targeted prevention and early intervention strategies. This review indicates that marijuana policy changes have had mixed effects on U.S. adolescent health including potential benefits from decriminalization and negative health outcomes evidenced by increases in cannabis-related motor vehicle accidents, emergency department visits, and hospitalizations. Federal and state legislatures should apply a public health framework and consider the possible downstream effects of marijuana policy.
- c. The abundant narrative about the “natural” value of marijuana misrepresents the fact that there are various forms of marijuana including synthetic forms with unpredictable content. According to the Centers for Disease Control (CDC) the potency and strength or amount of THC in marijuana has increased over the last decades. The higher the content, the higher the effect. The CDC adds, that in fact some methods of using marijuana may deliver higher levels of THC to the user. Like the CDC, the National Institute on Drug Abuse (NIDA) reports that marijuana potency as detected in confiscated samples has steadily increased. In the early 1990s the average THC content was 4%, conversely in 2018 it was more than 15%. Regardless, researchers do not yet know the extent of the consequences of marijuana on the body and on the brain, especially the brain under development. It is also unknown the degree to which people adjust to higher potency or how they compensate for the increased changes in the potency.

Through the legalization of cannabis, increased in marketing and visibility, reduces perceptions of harms and influences levels of use (Keyes, K.M., Wall, M, Cerda, M. et al.,2016). The 2019 MTFS also reported a concerning trend with the growing popularity of vaping devices and teens’ perceptions of the risks associated with marijuana use have steadily declined over the past decade. In 2019, 11.8% of 8th graders reported marijuana use in the past year and 6.6% in the past month (current use). Among 10th graders, 28.8% had used marijuana in the past year and 18.4% in the past month. Rates of use among 12th graders were 35.7% stated having used marijuana during the year prior to the survey and 22.3% used in the past month; 6.4% said they used marijuana daily or near daily.

IV. Considerations:

1. Apply proven tobacco control policies to cannabis regulations to protect the health of youth.
2. CDPH has yet to develop a product-by-product approval system for cannabis, similar to the FDA premarket tobacco application review process.
3. Youth cannabis use is influenced by normalization, reduced perceptions of harm, and has significant negative health impacts including learning disabilities and early onset psychosis.

ⁱ Meng Y, Ponce NA. The Changing Landscape: Tobacco and Marijuana Use Among Young Adults in California. UCLA Center for Health Policy Research; June 2020

ⁱⁱ Zhu S, Zhuang YL, Braden K, et al. Results of the statewide 2017-18 California Student Tobacco Survey. San Diego, CA: Center for Research and Intervention in Tobacco Control (CRITC), University of California, San Diego;2019

ⁱⁱⁱ Meng Y, Ponce NA. The Changing Landscape: Tobacco and Marijuana Use Among Young Adults in California. UCLA Center for Health Policy Research; June 2020.

^{iv} Nguyen N, Barrington-Trimis JL, Urman R, et al. Past 30-day co-use of tobacco and marijuana products among adolescents and young adults in California. *Addict Behav.* 2019;98:106053. doi:10.1016/j.addbeh.2019.106053.

Tucker JS, Pedersen ER, Seelam R, Dunbar MS, Shih RA, D'Amico EJ. Types of cannabis and tobacco/ nicotine co-use and associated outcomes in young adulthood. *Psychol Addict Behav.* 2019;33(4):401- 411. doi:10.1037/adb0000464

^v Braymiller JL, Barrington-Trimis JL, Leventhal AM, et al. Assessment of Nicotine and Cannabis Vaping and Respiratory Symptoms in Young Adults. *JAMA Netw Open.* 2020;3(12):e2030189. doi:10.1001/jamanetworkopen.2020.30189

^{vi} <https://www.cdph.ca.gov/Programs/CCDPHP/Pages/Vaping-Health-Advisory.aspx>