

**Health Impact Review of ESSB 5365
Preventing use of vapor and tobacco products by minors
(2023 Legislative Session)**

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Full review

The full Health Impact Review report is available at:

<https://sboh.wa.gov/sites/default/files/2023-03/HIR-2023-07-ESSB%205365.pdf>

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Executive Summary
ESSB 5365, Preventing use of vapor and tobacco products by minors
(2023 Legislative Session)

Evidence indicates that ESSB 5365 would likely limit the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products, which may reduce interaction with enforcement officers in some circumstances for some youth, which would likely improve health outcomes for these youth. The impacts on equity are unclear.

ESSB 5365 would also likely maintain a class 3 civil infraction and current penalties for youth under 18 years old issued a notice of infraction for purchasing or possessing cigarette, tobacco, or vapor products. The impacts on health and equity are unclear.

ESSB 5365 would also likely increase monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old. The impacts of how increased monetary penalties for some retailers may impact sales of cigarette, tobacco, and vapor products to youth under 18 years old are unclear.

BILL INFORMATION

Sponsors: Senate Committee on Labor & Commerce (originally sponsored by Senators Saldaña, Lias, Billig, Dhingra, Hunt, Lovelett, Nguyen, Pedersen, Randall, Robinson, Stanford, Valdez, Wellman, Wilson, C.)

Summary of Bill:

- Modifies the authority for detainment so that only a Washington State Liquor and Cannabis Board (LCB) enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer.
- Amends the penalties of a class 3 civil infraction for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products.
- Allows LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old.

HEALTH IMPACT REVIEW

Summary of Findings:

This Health Impact Review found the following evidence for provisions in ESSB 5365:

Pathway 1: Detainment of youth

- **Informed assumption** that modifying the authority for detainment so that only an LCB enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer will limit the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products. This assumption is based on current statute and information from key informants.
- **Informed assumption** that limiting the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products will reduce interaction with enforcement officers in some circumstances for some youth. This assumption is based on current statute and information from key informants.
- **Very strong evidence** that reducing interaction with enforcement officers in some circumstances for some youth will improve health outcomes for these youth.
- **Unclear evidence** how ESSB 5365 may impact health inequities due to inequities caused by racism in the tobacco industry, enforcement, and legal systems, and continued potential for interaction with enforcement officers.

Pathway 2: Class 3 civil infraction

- **Informed assumption** that amending the penalties of a class 3 civil infraction for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products will maintain a class 3 civil infraction and current penalties for youth under 18 years old. This assumption is based on current statute and information from key informants.
- **Unclear evidence** how maintaining a class 3 civil infraction and current penalties for youth under 18 years old who are issued a notice of infraction for purchasing, using, or possessing cigarette, tobacco, or vaping products may impact health outcomes.

Pathway 3: Monetary penalties for retailers

- **Informed assumption** that allowing LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old will lead to increased monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old. This assumption is based on current statute, research on monetary penalties, available Washington State data on compliance, and information from key informants.
- **Unclear evidence** how increased monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old may impact sales of cigarette, tobacco, and vapor products to youth under 18 years old.

“Other Considerations” includes potential impacts of provisions requiring referral to youth smoking cessation.

Introduction and Methods

A Health Impact Review is an analysis of how a proposed legislative or budgetary change will likely impact health and health disparities in Washington State ([RCW 43.20.285](#)). For the purpose of this review ‘health disparities’ have been defined as differences in disease, death, and other adverse health conditions that exist between populations ([RCW 43.20.270](#)). Differences in health conditions are not intrinsic to a population; rather, inequities are related to social determinants (access to healthcare, economic stability, racism, etc.). This document provides summaries of the evidence analyzed by State Board of Health staff during the Health Impact Review of Engrossed Substitute Senate Bill 5365 ([ESSB 5365](#)).

Staff analyzed the content of ESSB 5365 and created a logic model depicting possible pathways leading from the provisions of the bill to health outcomes. We consulted with experts and contacted key informants about the provisions and potential impacts of the bill. We conducted an objective review of published literature for each pathway using databases including PubMed, Google Scholar, and University of Washington Libraries. We evaluated evidence using set criteria and determined a strength-of-evidence for each step in the pathway. More information about key informants and detailed methods are available upon request.

The following pages provide a detailed analysis of the bill, including the logic model, summaries of evidence, and annotated references. The logic model is presented both in text and through a flowchart (Figures 1). The logic model includes information on the strength-of-evidence for each pathway. The strength-of-evidence has been established using set criteria and summarized as:

- **Very strong evidence:** There is a very large body of robust, published evidence and some qualitative primary research with all or almost all evidence supporting the association. There is consensus between all data sources and types, indicating that the premise is well accepted by the scientific community.
- **Strong evidence:** There is a large body of published evidence and some qualitative primary research with the majority of evidence supporting the association, though some sources may have less robust study design or execution. There is consensus between data sources and types.
- **A fair amount of evidence:** There is some published evidence and some qualitative primary research with the majority of evidence supporting the association. The body of evidence may include sources with less robust design and execution and there may be some level of disagreement between data sources and types.
- **Expert opinion:** There is limited or no published evidence; however, rigorous qualitative primary research is available supporting the association, with an attempt to include viewpoints from multiple types of informants. There is consensus among the majority of informants.
- **Informed assumption:** There is limited or no published evidence; however, some qualitative primary research is available. Rigorous qualitative primary research was not possible due to time or other constraints. There is consensus among the majority of informants.

- **No association:** There is some published evidence and some qualitative primary research with the majority of evidence supporting no association or no relationship. The body of evidence may include sources with less robust design and execution and there may be some level of disagreement between data sources and types.
- **Not well researched:** There is limited or no published evidence and limited or no qualitative primary research and the body of evidence was primarily descriptive in nature and unable to assess association or has inconsistent or mixed findings, with some supporting the association, some disagreeing, and some finding no connection. There is a lack of consensus between data sources and types.
- **Unclear:** There is a lack of consensus between data sources and types, and the directionality of the association is ambiguous due to potential unintended consequences or other variables.

This review was completed during the Legislative Session and was subject to the 10-day turnaround required in law. This review was subject to time constraints, which influenced the scope of work for this review. The annotated references are only a representation of the evidence and provide examples of current research. In some cases, only a few review articles or meta-analyses are referenced. One article may cite or provide analysis of dozens of other articles. Therefore, the number of references included in the bibliography does not necessarily reflect the strength-of-evidence. In addition, some articles provide evidence for more than one research question, so are referenced multiple times.

Analysis of ESSB 5365 and the Scientific Evidence

Summary of relevant background information

Washington State law

- [RCW 70.155.010](#) defines "Tobacco product" as a product that contains tobacco and is intended for human use.^{1a}
- [RCW 70.157.010](#) defines "Cigarette" as any product that contains nicotine, is intended to be burned or heated under ordinary conditions of use, and consists of or contains:
 - Any roll of tobacco wrapped in paper or in any substance not containing tobacco;
 - Tobacco, in any form, that is functional in the product, which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers as a cigarette;
 - Any roll of tobacco wrapped in any substance containing tobacco which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers as a cigarette.³
- [RCW 70.345.010](#) defines "Vapor product" as any noncombustible product that may contain nicotine and that employs a heating element, power source, electronic circuit, or other electronic, chemical, or mechanical means, regardless of shape or size, that can be used to produce vapor or aerosol from a solution or other substance.
 - "Vapor product" includes any electronic cigarette, electronic cigar, electronic cigarillo, electronic pipe, or similar product or device and any vapor cartridge or other container that may contain 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.
 - "Vapor product" does not include any product that meets the definition of cannabis, useable cannabis, cannabis concentrates, cannabis-infused products, cigarette, or tobacco products.⁴
- [RCW 82.24.010](#) defines "Retailer" as every person, other than a wholesaler, who purchases, sells, offers for sale or distributes one or more of the items subject to Washington State excise taxes, regardless of quantity or amount, or the number of sales, and all persons operating under a retailer's registration certificate.⁵ A "Wholesaler" is every person who purchases, sells, or distributes any one or more of the items subject to Washington State excise taxes to retailers for the purpose of resale only.⁵
- [RCW 82.26.010](#) defines "Distributor" as:
 - Any person engaged in the business of selling tobacco products in Washington State who brings, or causes to bring any tobacco products for sale into Washington State from outside the state;

^a Traditional and commercial tobacco are different in the ways they are planted, grown, harvested, and used. Traditional tobacco is and has been used in sacred ways by Indigenous communities and tribes, while commercial tobacco is manufactured with chemical additives for recreational use and profit, resulting in disease and death. Throughout this HIR, "tobacco" is used within a commercial context.²

- Any person who makes, manufactures, fabricates, or stores tobacco products in Washington State for sale in the state;
- Any person engaged in the business of selling tobacco products outside Washington State who ships or transports tobacco products to retailers in the state, to be sold by those retailers;
- Any person engaged in the business of selling tobacco products in Washington State who handles the sale of any tobacco products that are within the state but upon which tax has not been imposed.⁵
- [RCW 82.26.020](#) outlines the taxes imposed for the sale, handling, or distribution of all tobacco products in Washington State.⁶
- Under federal law, Washington State may not tax Tribes or Tribal members in Indian Country.⁷ People purchasing tobacco products for resale from Tribes or Tribal members who are exempt from the tobacco tax are subject to tobacco tax on the product.⁷
- [RCW 70.155.100](#) provides authority to the Washington Liquor and Cannabis Board (LCB) to revoke or suspend the license of any retailer if the retailer has violated certain statutes.⁸ LCB may impose sanctions against a licensee who is found to sell or give tobacco to a youth or emerging adult under 21 years of age or who does not have appropriate tobacco sales prohibition signage posted. Sanctions cannot exceed:
 - \$200 for the first violation within any 3-year period;
 - \$600 for the second violation within any 3-year period;
 - \$2,000 and suspension of the license for 6 months for the third violation within any 3-year period; and
 - \$3,000 and suspension of the license for 12 months for the fourth violation within any 3-year period.⁸
- [RCW 70.155.110](#)⁹ and [RCW 70.345.160](#)¹⁰ provide authority to LCB to revoke or suspend the license of any retailer or wholesaler in accordance with the provisions of RCW 70.155.100 and Chapter 70.345 RCW.
 - LCB agents or employees are authorized to enter businesses where tobacco products are sold for the purpose of enforcing provisions related to tobacco access for youth.
 - A peace officer or LCB enforcement officer who has reasonable grounds to believe a youth under 18 years old is purchasing, attempting to purchase, or in possession of tobacco products, may detain a youth for a reasonable period of time and in a reasonable manner necessary to determine the youth's true identity and date of birth.
 - Tobacco products possessed by youth under 18 years old are considered contraband and may be seized by a peace officer or an LCB enforcement officer.
 - LCB has authority to conduct compliance activities to enforce provisions related to youth tobacco access.
- [RCW 70.155.080](#)¹¹ and [RCW 70.345.140](#)¹² establish that a youth under 18 years old who purchases or attempts to purchase, possesses, or obtains or attempts to obtain cigarette, tobacco, or vapor products commits a class 3 civil infraction and is subject to a fine, or

participation in up to 4 hours of community service, or both. The court is also authorized to require participation in a smoking cessation program.

- [RCW 3.72.010](#) establishes district and municipal youth courts and grants youth courts jurisdiction over civil, traffic, and transit infractions alleged to have been committed by youth aged 16 or 17 years.¹³
 - [RCW 13.04.030](#) states that youth aged 16 or 17 years who commit a civil infraction are under the jurisdiction of district and municipal courts.¹⁴ Statutorily, these youth are not under the exclusive original jurisdiction of the Washington State juvenile court system and are under adult court jurisdiction, meaning youth aged 16 or 17 years are “held to the same responsibility as adults.”¹⁵ However, if a youth is also charged with a potential offense or infraction subject to juvenile court jurisdiction that “arise[s] out of the same event or incident, the juvenile court may have jurisdiction of both matters.”¹⁴
- District and municipal youth courts may also accept referrals of civil, traffic, and transit infractions alleged to have been committed by youth aged 12 through 15 years from a juvenile court diversion unit.¹³
 - [RCW 13.40.250](#) states that youth aged 12 through 15 years who are alleged of a civil infraction may have their case diverted, filed in juvenile court, or referred to a district or municipal youth court.¹⁶
 - For youth aged 12 through 15 years, monetary penalties may not exceed \$100.00 and, at the youth’s request, “the court may order performance of a number of hours of community restitution in lieu of a monetary penalty...”¹⁶ Youth aged 12 through 15 years may also participate in a district or municipal youth court program (e.g., counseling, treatment, or other educational programs).¹⁶
 - Moreover, “[o]ther than filing a petition for termination of the diversion agreement in juvenile court, nothing concerning the [youth’s] participation in the youth court program shall be filed in any public court file concerning the [youth’s] participation or presence in the youth court program” and “[n]o court case number shall be assigned to the case against the [youth] while [they] participate in the youth court program.”¹⁶
- [RCW 3.72.020](#) states that youth court agreements are a contract “whereby the juvenile agrees to fulfill certain conditions imposed by a youth court in lieu of a determination that the infraction occurred. Such agreements may be entered into only after the law enforcement authority has determined that probable cause exists to believe that a [traffic, transit, or civil infraction] has been committed and that the [youth] has committed it.”¹⁷ Relevant to conditions specified for purchasing, using, or possessing cigarette, tobacco, or vapor products:
 - Monetary penalties may not exceed \$100.00.¹⁷ Monetary penalties “assessed and collected [...] shall be deposited and distributed in the same manner as costs, fines, forfeitures, and penalties are assessed and collected

[under relevant laws...]"¹⁷ A key informant representing the District and Municipal Court Judges Association (DMCJA) stated that, after assessments, a baseline \$50.00 monetary penalty would total \$103.00 for a class 3 civil infraction for a youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products (personal communication, DMCJA, March 2023). If a monetary penalty cannot be reasonably paid by the youth due to a lack of financial resources, "the court may convert any or all of the monetary penalty into community service [...] The number of hours of community service in lieu of a monetary penalty shall be converted at a rate of the prevailing state minimum wage per hour."¹⁷

- Community service may not exceed 150 hours and may not be performed during school hours.
- There are no civil penalties in Washington State statute if an emerging adult aged 18 through 20 years old (i.e., under 21 years old) is found to have purchased, used, or possessed tobacco products.

Cigarette, tobacco, and vapor product regulation for youth

- Laws that include an enforcement officer penalizing youth for purchasing, using, or possessing cigarette, tobacco, or vapor products are referred to as purchase, use, or possession (PUP) laws.
 - In 1988, 17 states first adopted PUP laws.¹⁸
- In June 2009, the Family Smoking Prevention and Tobacco Control Act (2009 Tobacco Control Act) was signed into law in part to reduce smoking rates among youth.¹⁹ This Act:
 - Gave the U.S. Food and Drug Administration (FDA) authority to regulate the manufacture, distribution, and marketing of tobacco products.¹⁹
 - Banned flavors, except menthol and tobacco, in cigarettes¹⁹ specifically as one strategy to reduce the use of cigarettes among youth.
 - Created a system of fines and suspensions against retailers who sell to youth under the legal purchase age.²⁰
- In December 2018, the Office of the Surgeon General issued an advisory about e-cigarette use among youth.²¹ The statement noted that, "any e-cigarette use among young people is unsafe, even if they do not progress to future cigarette smoking."²¹
- On March 27, 2019, the Washington State Legislature passed Engrossed House Bill (EHB) 1074 (Chapter 15, Laws of 2019), Protecting youth from tobacco products and vapor products.²² The law increased the legal age of sale of tobacco and vapor products from 18 to 21 years old and permitted the Governor to seek government-to-government consultations with Tribes about raising the minimum legal age of sale in cigarette tax compacts. The law became effective January 1, 2020.
 - [RCW 43.06.455](#) allows the Governor to enter into cigarette tax compacts with Tribes and applies to the sale of all tobacco and vapor products sold on Tribal lands. Statute specifies that, "a cigarette tax contract with a [T]ribe shall provide

for a tribal cigarette tax in lieu of all state cigarette taxes and state and local sales and use taxes on sales of cigarettes in Indian [C]ountry by [Tribal] retailers.”

- In July 2019, FDA launched its first youth e-cigarette prevention TV ads educating youth about the dangers of e-cigarette use.²³
- In July 2019, the U.S. Centers for Disease Control and Prevention (CDC), FDA, state and local health departments, and other clinical and public health partners began investigating a national outbreak of e-cigarette, or vaping, product use-associated lung injury (EVALI).²⁴ CDC stated that, “laboratory data show that vitamin E acetate, an additive in some [Tetrahydrocannabinol (THC)]-containing e-cigarette, or vaping, products, is strongly linked to the EVALI outbreak.”²⁴
- On December 20, 2019, the Federal Food, Drug, and Cosmetic Act was modified to raise the federal minimum age for sale of tobacco products from 18 years to 21 years old.²⁵ The change applied to all tobacco products, including cigarettes, cigars, and e-cigarettes, and was effective immediately.²⁵
- In January 2020, the FDA issued a “policy prioritizing enforcement against certain unauthorized flavored e-cigarette products that appeal to kids, including fruit and mint flavors.”²⁶
- The World Health Organization (WHO) has concluded that, “available evidence suggests that smoking is associated with increased severity of disease and death in hospitalized COVID-19 patients.”²⁷
- In 2020, CDC published information on which states and territories have laws prohibiting sales of tobacco to youth under 21 years old.²⁸ The report includes information on which states penalize youth for purchase, use, and/or possession of tobacco and found that out of all states and territories evaluated, only 6 states and Palau do not have a policy penalizing youth.²⁸
 - Among states who do have a penalty for purchase, use, and/or possession, the penalties include community service, fines, educational or cessation programming, civil penalties, and/or misdemeanors.²⁸
 - Seven states (not including Washington State) have exemptions from the penalties for members of the armed services.²⁸
- In June 2022, the FDA launched a youth e-cigarette prevention campaign, “Next Legends” with specific messaging toward American Indian and Alaska Native youth.²⁹

Summary of ESSB 5365

- Modifies the authority for detainment so that only a LCB enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer.
- Amends the penalties of a class 3 civil infraction for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products.

- Allows LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old.

Health impact of ESSB 5365

Evidence indicates that ESSB 5365 would likely limit the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products, which may reduce interaction with enforcement officers in some circumstances for some youth, which would likely improve health outcomes for these youth. The impacts on equity are unclear.

ESSB 5365 would also likely maintain a class 3 civil infraction and current penalties for youth under 18 years old issued a notice of infraction for purchasing or possessing cigarette, tobacco, or vapor products. The impacts on health and equity are unclear.

ESSB 5365 would also likely increase monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old. The impacts of how increased monetary penalties for some retailers may impact sales of cigarette, tobacco, and vapor products to youth under 18 years old are unclear.

Pathway to health impacts

The potential pathway leading from the provisions of ESSB 5365 to health and equity are depicted in Figure 1.

Pathway 1: Detainment of youth

Based on provisions of the bill, we have made the informed assumptions that ESSB 5365 may limit the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products, and may limit the circumstances in which youth may be detained may reduce interaction with enforcement officers in some circumstances for some youth. These assumptions are based on current statute and information from key informants.

There is very strong evidence that limiting the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products will improve health outcomes for these youth.³⁰⁻³² There is unclear evidence how ESSB 5365 may impact health inequities due to inequities caused by racism in the tobacco industry, enforcement, and legal systems, and continued potential for interaction with enforcement officers.^{30,33-45}

Pathway 2: Class 3 civil infraction

We have made the informed assumption that amending the penalties of a class 3 civil infraction for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products will maintain a class 3 civil infraction and current penalties for youth under 18 years old. This assumption is based on current statute and information from key informants. There is unclear evidence how this may impact health outcomes.⁴⁵⁻⁴⁹

Pathway 3: Monetary penalties for retailers

We have made the informed assumption that allowing LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products

to youth and emerging adults under 21 years old will lead to increased monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old. This assumption is based on current statute, available Washington State data on compliance, and information from key informants. Lastly, there is unclear evidence for how increased monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old may impact sales of cigarette, tobacco, and vapor products to youth under 18 years old.

Scope

Due to time limitations, we only researched the most linear connections between provisions of the bill and health and equity and did not explore the evidence for all possible pathways. For example, we did not evaluate potential impacts related to:

- Health outcomes of using cigarette and tobacco products. It is well-established and widely accepted that decreased use of cigarette and tobacco products improves health outcomes.⁵⁰⁻⁵² Tobacco use is the leading cause of preventable disease and death in the U.S.⁵⁰ A large body of evidence has shown a causal link between combustible cigarette smoking and diseases in nearly every organ, diminished health status, exacerbation of asthma, inflammation, impaired immune function, age-related macular degeneration, harms to the fetus, diabetes, erectile dysfunction, arthritis, cancer, and premature death.⁵¹ CDC has found that tobacco use is causally associated with at least 12 types of cancer, including cancer of the oral cavity and pharynx; esophagus; stomach; colon and rectum; liver; pancreas; larynx; lung, bronchus, and trachea; kidney and renal pelvis; urinary bladder; cervix; and acute myeloid leukemia.⁵⁰ Other research found that higher average cigarette use during adolescence was associated with poorer academic performance, mental health, physical health, and social functioning as well as with greater academic unpreparedness, physical ailments, and potential involvement with the legal system.⁵² Lastly, the World Health Organization (WHO) concluded that, “available evidence suggests that smoking is associated with increased severity of disease and death in hospitalized COVID-19 patients.”²⁷ In a review of 34 peer-reviewed journal articles, WHO identified studies that found a statistically significant association between smoking status and COVID-19 disease severity, admission to an Intensive Care Unit, ventilator use, and death.²⁷
- Health outcomes of using vapor products. Evidence has also shown that use of e-cigarette and vapor products has negative impacts on health for youth,^{21,53-56} and decreasing use of vapor products among youth has been shown to improve health outcomes.^{53,54,57-71} Generally, research has shown that use of vapor products has numerous negative health impacts, including respiratory, cardiac, and digestive system effects; unintentional and intentional poisonings; and injuries due to explosion.⁷² In a 2018 report about the public health consequences of e-cigarettes, the National Academy of Sciences stated that there is conclusive evidence that use of e-cigarettes has multiple adverse impacts on health.⁵³ The Academy found substantial evidence that e-cigarette use results in symptoms of dependence on e-cigarettes, formation of reactive oxygen species/oxidative stress, increased heart rate shortly after nicotine intake, and exposure to chemicals capable of

causing DNA damage and mutagenesis, suggesting the possibility that long-term exposure could increase risk of cancer and adverse reproductive health outcomes.^{53,72} Overall, the report concluded that nicotine intake among adult e-cigarette users is comparable to intake from combustible tobacco cigarettes.^{53,73} A study of youth aged 13 to 18 years old who use e-cigarettes found that, compared to non-users, users had three times greater levels of five volatile organic compounds in their urine and saliva, most of which are known carcinogens.⁶⁰ Additionally, e-cigarette use has been shown to be independently and significantly associated with increased odds of heart attack.⁶¹ Data from 96,467 respondents to the 2014, 2016, and 2017 National Health Interview Survey found that adults that used e-cigarettes were 34% more likely to have a heart attack and 25% more likely to have coronary artery disease compared to adults that did not use e-cigarettes.⁷⁴ Users were at increased risk of heart attack and coronary artery disease regardless of whether they vaped occasionally or daily.⁷⁴ Other studies have found that e-cigarette devices emit particulate matter and that passive or secondhand exposure to vaping products could impact health.^{71,75} For example, a study among youth in Florida found that secondhand exposure to aerosol from electronic nicotine delivery systems was associated with higher odds of asthma attacks among youth with asthma.⁷⁵ Lastly, evidence shows that most youth do not use e-cigarettes to quit smoking.^{76,77} For example, data from the National Youth Tobacco Survey (2016) showed only 7.8% of respondents who used e-cigarettes cited cessation as a reason for e-cigarette use.⁷⁶

- Other sources of youth access to cigarette, tobacco, and vapor products. Data from the 2021 Washington State Healthy Youth Survey indicate that among 10th and 12th graders who took the survey and indicated use of tobacco products, the majority of youth access tobacco product by giving someone else money to buy the product (0.8% of 10th graders and 2.3% of 12th graders); borrowing (or bumming) from someone else (1.5% of 10th graders and 2.1% of 12th graders); or through some other unidentified means (1.7% of 10th graders and 2.5% of 12th graders). Data show that 0.5% of 10th graders and 1.6% of 12th graders accessed tobacco product through a store.⁷⁸ This HIR explores direct youth access to cigarette, tobacco, and vapor products through licensed retailers.
- Enforcement officer authority regarding youth possession of other substances. This HIR focuses on peace officer and LCB enforcement officer authority related to youth purchase, use, and possession of cigarette, tobacco, and vapor products. It is possible that youth encounter enforcement officers in scenarios outside of the scope of this HIR. In 2021, *State v. Blake* decision established that [RCW 69.50.4013\(1\)](#)⁷⁹ is unconstitutional, and there is no longer a Washington State law making simple possession of controlled substances a crime. However, [RCW 69.50.509](#) establishes that after a sworn complaint and court appearance regarding probable cause of controlled substance manufacture or distribution, a warrant for search and seizure can be directed to any law enforcement officer.⁸⁰ It is possible for youth to interact with enforcement officers through this channel. For example, in 2021, there were 118 arrests of youth aged 10 through 17 years for Drug/Narcotic Violations.⁸¹ Of these, 10.4% were related to possessing/concealing heroin; 4.6% were related to possessing/concealing cannabis; 3.3% were related to distributing/selling heroin; and 0.7% were related to distributing/selling cannabis.⁸¹

Further, [RCW 69.41.030](#) establishes unlawful possession of any legend drug (substances that require a prescription or are restricted to practitioner use).⁸² It is possible for youth to encounter enforcement officers due to suspicion of possession of a legend drug.

- The youth tobacco and vapor products prevention account. [RCW 70.155.120](#) establishes the youth tobacco and vapor products prevention account in the state treasury.⁸³ Fees collected regarding retailer, wholesaler, distributor violations, and funds collected by LCB from monetary penalties are deposited into this account, except that 10% of such fees and penalties are deposited in the state general fund.⁸³ ESSB 5365 would allow the LCB to increase monetary penalties imposed on tobacco retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old. It is not possible to predict whether the potential increase in monetary penalties would change the funding amount dedicated to the youth tobacco and vapor products prevention account.
- Cigarette, tobacco, and vapor product access prevention programming. There are various program implementation efforts across Washington State aimed at preventing youth access to cigarette, tobacco, and vapor products. These efforts include but are not limited to compliance checks, retailer education, and grassroots and community coalition programming. This HIR did not evaluate the potential impacts of cigarette, tobacco, or vapor product youth access prevention programming in Washington State.

Magnitude of impact

As of 2022, there were 1,689,516 youth under 18 years old in Washington State, representing 21.7% of the Washington State population.⁸⁴ The Washington State Office of Financial Management estimates that in 2022, there were 476,052 youth aged 5 through 9 years; 494,482 youth aged 10 through 14 years; and 480,909 youth aged 15 through 19 years.⁸⁵

According to the 2021 Washington State Healthy Youth Survey (HYS), approximately 8.7% of 8th graders, 13.0% of 10th graders, and 19.9% of 12th graders in Washington State have ever smoked a cigarette.⁷⁸ The same survey found that 10.1% of 8th graders, 18.5% of 10th graders, and 31.7% of 12th graders had ever used an electronic cigarette or vape pen.⁷⁸ When asked about access to tobacco, the 2021 HYS also found that among 12th graders, 2.3% of students gave someone else money to buy tobacco, 2.1% borrowed (or bummed) tobacco from someone else, and 1.6% bought tobacco at a store such as a convenience store, supermarket, discount store, or gas station.⁷⁸ About 6.3% of 10th graders and 9.8% of 12th graders reported that within the past 12 months, they tried to quit using all products that contain nicotine.⁷⁸ When Washington 12th graders were asked what age they were the first time they used an electronic cigarette or vape pen, the most common age reported was age 15 (8.8% of 12th graders).⁷⁸

Detainment and class 3 civil infractions

Under current statute, peace officers or LCB enforcement officers may detain and/or issue a notice of infraction to youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products. Data are not consistently collected across all instances of officer interaction and detainment for potential purchase, use, or possession of cigarette, tobacco, or vapor products among youth under 18 years old.

There are approximately 130 LCB enforcement officers working statewide on all program areas (i.e., tobacco, vapor, liquor, cannabis) (personal communication, LCB, March 2023). While only a portion of these enforcement officers are dedicated to enforcement of laws related to cigarette, tobacco, and vapor products (i.e., 1 lieutenant and 5 officers), all LCB enforcement officers may detain youth for purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023). LCB enforcement officers may report contacts with youth related to purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023). Based on unpublished data from LCB, 50 youth in 12 Washington State counties were detained for purchase, use, or possession of cigarette, tobacco, or vapor products from 2020 through 2022 (personal communication, LCB, March 2023). LCB officers are directed, not required, to track instances of youth detainment (personal communication, LCB, March 2023). Over the same time period, one instance of youth detainment led to a licensed retailer violation for selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old (personal communication, LCB, March, 2023). However, LCB stated that since 2018, their enforcement officers have not issued a notice of infraction to any youth under 18 years old for purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023).

There are approximately 10,500 commissioned peace officers in Washington State (personal communication, Washington Association of Sheriffs and Police Chiefs [WASPC], March 2023). Law enforcement agencies in Washington State do not collect data related to detainment of youth for potential purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, WASPC March 2023).

If a peace officer or LCB enforcement officer issues a notice of infraction for purchase, use, or possession of cigarette, tobacco, or vapor products, the class 3 civil infraction must be filed by the officer with a district or municipal court within 5 days of issuance (personal communication, DMCJA, March 2023). Data related to class 3 civil infractions filed under RCW 70.155.080 (Cigarettes or tobacco products) or RCW 70.345.140 (Vapor products) are reported to the Administrative Office of the Courts (AOC). Washington State has a non-unified court system and information and data may not be consistently reported (personal communication, AOC, July 2020).

From 2018 through 2022, 357 youth under 18 years old received notice of a class 3 civil infraction under RCW 70.155.080 (Cigarette or tobacco products; 121 youth) or RCW 70.345.140 (Vapor products; 237 youth) (unpublished data, AOC, March 2023).^b While the majority of cases were filed in a district or municipal court (95.2% of cases), 17 cases were filed in a Superior Court (unpublished data, AOC, March 2023). RCW 13.40.250 states that youth aged 12 through 15 years who are alleged of a civil infraction may have their case diverted, filed in juvenile court, or referred to a district or municipal youth court.¹⁶ Moreover, the juvenile court division of Superior Court has jurisdiction over youth aged 8 through 17 years charged with a crime.¹⁵ Therefore, these 17 youth may have been retained in juvenile court, or may have been

^b These numbers total 358; however, 1 youth was issued a notice of infraction under RCWs 70.155.080 and 70.345.140 in the same event. Therefore, a total of 357 youth were issued a notice of infraction from 2018 through 2022.

issued notice of a class 3 civil infraction as part of a case where they were also charged with a crime (personal communication, DMCJA, March 2023).

There are 4 ways youth can respond to a notice of a class 3 civil infraction: 1) Pay the full amount of the civil monetary penalty (i.e., \$103.00 [\$50.00 plus assessments]); 2) Admit to the infraction and indicate that the fine cannot be paid; 3) Contest the infraction by requesting a court hearing; or 4) Mitigate and explain the circumstances of the infraction by requesting a court hearing (personal communication, DMCJA, March 2023). For 98.3% (351 out of 357 cases) of class 3 civil infractions under RCW 70.155.080 or RCW 70.345.140, the result of the case is available (unpublished data, AOC, March 2023).

In 42.2% of cases, youth were found to have committed the infraction (unpublished data, AOC, March 2023). A youth may receive a case result of “Committed” if they: 1) Did not respond to the notice of infraction in the time allowed or did not appear for a scheduled hearing; 2) Admitted to committing the infraction (whether or not they have the ability to pay); or 3) Were found to have committed the infraction after a hearing where they contested the infraction (personal communication, DMCJA, March 2023). In 39.9% of cases, youth paid the penalty in full and did not contest the charge or ask for a hearing to explain the circumstances (unpublished data, AOC, March 2023). Additionally, 7.4% of cases were transferred to another court; 6.6% of cases were dismissed; and 0.9% of cases were dismissed with prejudice (i.e., indicating further proceedings are not permitted) (unpublished data, AOC, March 2023). Lastly, 2.2% of cases received a non-charge (i.e., cases were pending in a Superior Court) and 0.9% of cases received a guilty charge (i.e., a youth was found guilty of a criminal offense in Superior Court) (unpublished data, AOC, March 2023). For all case results other than “Paid,” a youth may have appeared in a court hearing (personal communication, DMCJA, March 2023), suggesting up to 60% of youth may appear in court for a class 3 civil infraction for possessing, purchasing, or using cigarette, tobacco, or vapor products.

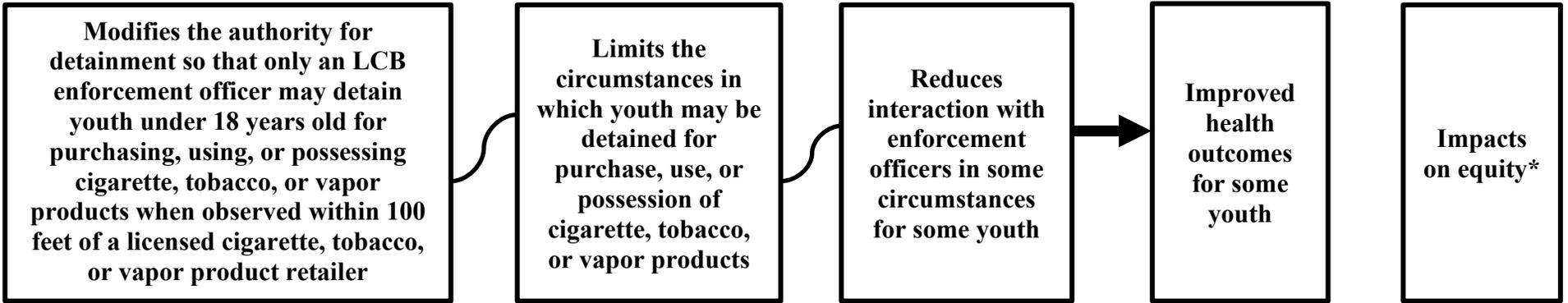
Available demographic information (including sex and race/ethnicity) is typically reported by law enforcement or court documents (personal communication, AOC, July 2020). This information may not be accurately reported and may not reflect a person’s identity. According to available data, the majority of youth who received notice of a class 3 civil infraction under RCW 70.155.080 or RCW 70.345.140 were 16 years old, male, and white (unpublished data, AOC, March 2023). Approximately 33% of youth who received notice of an infraction were 17 years old when the case was filed; 54% were 16 years old; 6.2% were 15 years old; 3.4% were 14 years old; 1.1% were 13 years old; and 0.3% (i.e., 1 youth) were 12 years old (unpublished data, AOC, March 2023). About 79% of youth were reported as male and 19.9% of youth were reported as female (sex was listed as unknown for 1% of youth) (unpublished data, AOC, March 2023). About 85% of youth were reported as white, 4.2% were Black, 1.7% were American Indian or Alaska Native, 0.6% were Native Hawaiian or Pacific Islander, and 3% were Asian (unpublished data, AOC, March 2023). About 10% of youth were reported as Hispanic (unpublished data, AOC, March 2023). However, race was listed as unknown for 9% of youth and ethnicity was listed as unknown for 80% of youth.

Retailers

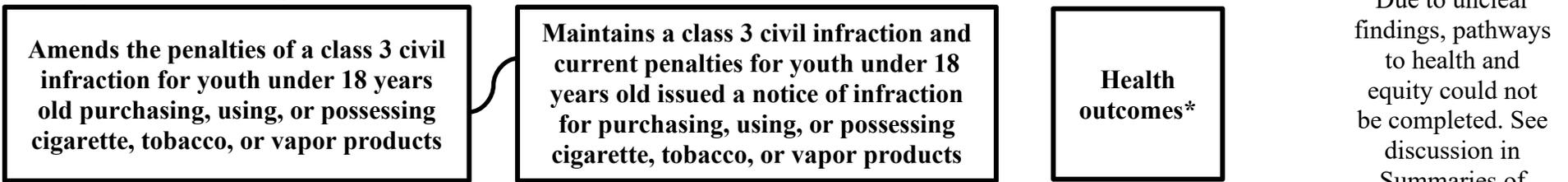
As of February 2023, there were 5,795 licensed tobacco product retailers and 3,986 vapor product retailers in Washington State (unpublished data, LCB, March 2023). According to data from LCB, the statewide compliance rate for tobacco and vapor retailers was 92% in 2020, 74% in 2021, and 82% in 2022 (unpublished data, LCB, March 2023). There were 48 reported sales of cigarette, tobacco, or vapor products to youth in 2020; 124 sales in 2021; and 232 sales in 2022 (unpublished data, LCB, March 2023).

Overall, ESSB 5365 would impact youth under 18 years old and cigarette, tobacco, and vapor product licensed retailers.

Pathway 1: Detainment of youth



Pathway 2: Class 3 civil infraction



Due to unclear findings, pathways to health and equity could not be completed. See discussion in Summaries of Findings.

Pathway 3: Monetary penalties for retailers

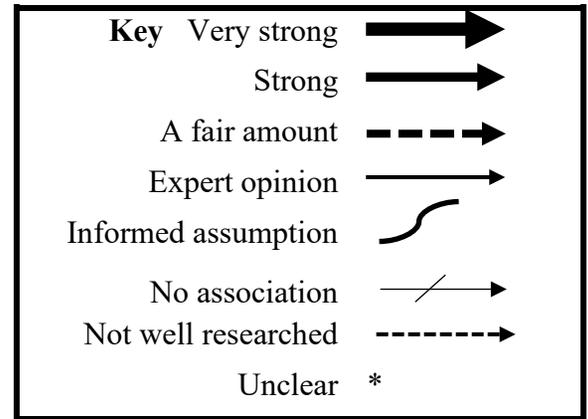
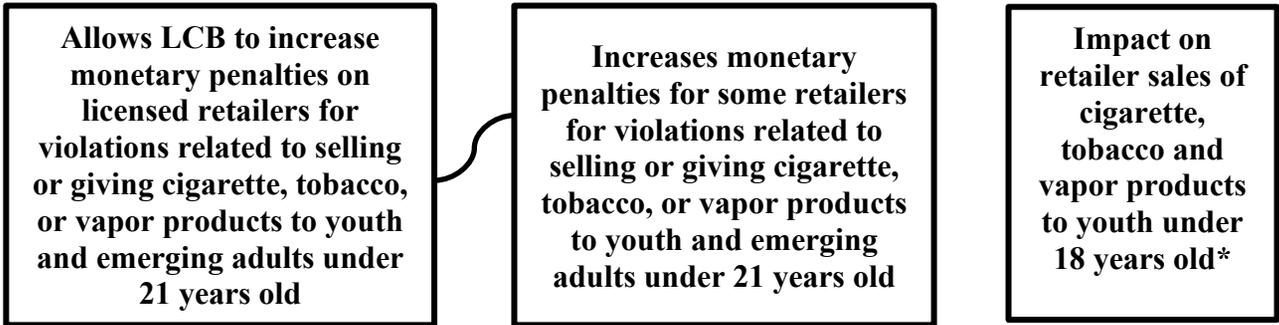


Figure 1:
Preventing use of vapor and tobacco products by minors.
ESSB 5365

Summaries of Findings

Pathway 1: Detainment of youth

Will modifying the authority for detainment so that only an LCB enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer limit the circumstances in which youth may be detained?

We have made the informed assumption that modifying the authority for detainment so that only a Washington State Liquor and Cannabis Board (LCB) enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer will limit the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products. This informed assumption is based on current statute and information from key informants.

Under current statute outlined in [RCW 70.155.110](#) (Cigarette and tobacco products) and [RCW 70.345.160](#) (Vapor products), peace officers or LCB enforcement officers who have reasonable grounds to believe a youth under 18 years old observed by the officer is purchasing, attempting to purchase, or in possession of cigarette, tobacco, or vapor products may detain the person to determine their name and date of birth. If the youth is found to be under 18 years old, officers have the authority to seize cigarette, tobacco, or vaping products. Also in current statute, [RCW 70.345.140](#) and [RCW 70.155.080](#) establish that a person under 18 years old who purchases or attempts to purchase, possesses, or obtains or attempts to obtain cigarette, tobacco, vapor products commits a class 3 civil infraction and is subject to a fine, or participation in up to 4 hours of community service, or both.

There are approximately 130 LCB enforcement officers working statewide on all program areas (i.e., tobacco, vapor, liquor, cannabis) (personal communication, LCB, March 2023). LCB officers are assigned to a specific region and geographical area of the state, and often travel outside that assigned region to conduct business (personal communication, LCB, March 2023). While only a portion of these enforcement officers are dedicated to enforcement of laws related to cigarette, tobacco, and vapor products (i.e., 1 lieutenant and 5 officers), all LCB enforcement officers may detain youth for purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023). LCB enforcement officers may report contacts with youth related to purchase, use, and possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023). Based on unpublished data from LCB, 50 youth in 12 Washington State counties were detained for purchase, use, or possession of cigarette, tobacco, or vapor products from 2020 through 2022 (unpublished data, LCB, March 2023). LCB officers are directed, not required, to track instances of youth detainment (personal communication, LCB, March 2023).

There are approximately 10,500 commissioned peace officers in Washington State (personal communication, Washington Association of Sheriffs and Police Chiefs [WASPC], March 2023). Law enforcement agencies in Washington State do not collect data related to detainment of youth for potential purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, WASPC, March 2023).

There are currently no set limits or boundaries in Washington State statute regarding where peace officers or LCB enforcement officers may detain youth for purchasing, using, or possessing cigarette, tobacco, or vapor products. Key informants representing LCB stated that enforcement officers do not generally surveil for potential youth purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023). Rather, LCB enforcement officers may detain youth while conducting regular business with licensed tobacco and vapor product retailers (personal communication, LCB, March 2023). Based on information from key informants representing LCB, enforcement officers have only detained youth in close proximity to (e.g., the parking lot) or inside of a tobacco or vapor retailer premises (personal communication, LCB, March 2023).

Since data related to detainment of youth by peace officers are not available, it is not possible to determine the types of locations where peace officers may have detained youth. However, peace officers may work in more diverse settings than LCB enforcement officers. For example, school resource officers are often employed by local law enforcement agencies and are considered peace officers (personal communication, WASPC, March 2023). Based on information provided by youth and community members, youth have been detained by peace officers at various locations (schools, bus stops, etc.) that may or may not be in proximity to a tobacco or vapor product retailer (personal communications, March 2023).

If a youth who is detained is found to be under 18 years old, peace officer and LCB enforcement officers have authority to issue a notice of infraction for purchase, use, or possession of cigarette, tobacco, or vapor products. Data related to class 3 civil infractions filed under RCW 70.155.080 (Cigarettes or tobacco products) or RCW 70.345.140 (Vapor products) are reported to the Administrative Office of the Courts (AOC). From 2018 through 2022, 357 youth under 18 years old received notice of a class 3 civil infraction under RCW 70.155.080 (121 youth) or RCW 70.345.140 (237 youth) (unpublished data, AOC, March 2023).^c It is not possible to determine from available court data whether the notice of infraction was issued by a peace officer or a LCB enforcement officer. Key informants representing LCB stated that LCB enforcement officers have not issued a notice of infraction to any youth under 18 years old for purchase, use, or possession of cigarette, tobacco, or vapor products since 2018 (personal communication, LCB, March 2023). Therefore, based on available data and information from key informants, most notices of infraction to youth under 18 years old for purchase, use, or possession of cigarette, tobacco, or vapor products are likely issued by peace officers in Washington State.

Provisions of ESSB 5365 would modify RCW 70.345.160 so that only LCB enforcement officers would have the authority to detain youth for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed tobacco or vapor product retailer. However, key informants stated confusion about the interpretation of three sections of ESSB 5365. First, the bill states, "...an enforcement officer of the board who has reasonable grounds to believe a person observed by the officer in proximity [100 feet or less] to a retailer licensee [...] who is purchasing, attempting to purchase, or in possession of vapor products is

^c These numbers total 358; however, 1 youth was issued a notice of infraction under RCWs 70.155.080 and 70.345.140 in the same event. Therefore, a total of 357 youth were issued a notice of infraction from 2018 through 2022.

under eighteen years of age, may detain such person...” As written, it is unclear whether both the officer and youth must be within 100 feet of a retailer, and whether the detainment must occur within 100 feet of a retailer. There is some concern that, as written, the officer has the authority to witness a youth purchase, use, or possess in proximity to a retailer, but could initiate detainment at a later point in time or in a location farther from the retailer. Second, language in Section 2(3) states, “any officers issuing citations under this section must collect demographic data, which must be provided to the [LCB]...” Key informants pointed out that this language implies there may be officers aside from LCB enforcement officers issuing citations (personal communications, March 2023). Second, language in Section 8 of ESSB 5365 states, “[n]othing in this act shall be interpreted to limit the ability of a peace officer or an enforcement officer of the [LCB] to enforce the provisions of chapters 70.155 and 70.345 RCW and RCWs 26.28.080 and 82.24.500.” Key informants stated that clarification regarding peace officer authority to detain youth and issue a class 3 civil infraction for purchase, use, or possession of cigarette, tobacco, or vapor products is necessary to ensure legal clarity and compliance (personal communications, March 2023).

Given the current number of LCB officers as compared to peace officers in Washington State, the rates and locations of detainment, and rates of civil infraction issuance across LCB enforcement officers compared to peace officers, we have made the informed assumption that modifying the authority for detainment so that only a LCB enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer will likely limit the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products.

Will limiting the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco or vapor products reduce interaction with enforcement officers in some circumstances for some youth?

We have made the informed assumption that limiting the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products will reduce interaction with enforcement officers in some circumstances for some youth. This informed assumption is based on current statute and information from key informants.

Under RCW 70.155.110 and RCW 70.345.160, youth who are detained for purchase, use or possession of cigarette, tobacco, or vapor products are interacting with Washington State peace officers or LCB enforcement officers.^{9,10} Washington State has both general authority and limited authority peace officers.⁸⁶ General authority peace officers are employed by a general authority Washington State law enforcement agency.⁸⁶ General peace officers are commissioned to enforce the criminal laws of Washington State.⁸⁶ Limited authority peace officers are employed by a limited authority agency, and are commissioned to detect or apprehend violators of the laws in some or all of the limited subject areas for which the agency at which they are employed is responsible.⁸⁶ An LCB enforcement officer is a limited authority peace officer with authority to enforce state liquor, cannabis, and tobacco laws by conducting investigations, financial audits, and on-premises inspections; citing and arresting violators; and providing education.⁸⁷

While on duty, LCB enforcement officers are not uniformed and carry firearms (personal communication, LCB, March 2023). LCB stated that their interactions with youth sometimes lead to confiscation of product and have not resulted in escalation (personal communication, LCB, March 2023). In some instances, LCB enforcement officers may contact youths' parents to share that an exchange regarding purchase, use, or possession took place (personal communication, LCB, March 2023). While peace officers may also carry firearms,⁸⁶ they are uniformed.⁸⁸ WASPC stated that peace officer interactions with youth during detainment for purchase, use, or possession of cigarette, tobacco, or vapor products may lead to alternative activities (i.e. picking up trash) rather than issuing a citation (personal communication, WASPC, March 2023). Key informants representing WASPC and LCB stated that peace officers and LCB enforcement officers strive for positive interactions with youth, and that the decision to issue a notice of citation is at the discretion of the enforcement officer (personal communications, March 2023).

Both peace officers and LCB enforcement officers may search youth after receiving tips of cigarette, tobacco, or vapor product possession, and youth of color and LGBTQ+ youth are disproportionately approached by enforcement officers (personal communications, March 2023). Key informants stated that enforcement of RCW 70.155.080 and RCW 70.345.140 introduce opportunities for escalation of youth interactions with enforcement officers based on suspicion of possession of cigarette, tobacco, and vapor products (personal communications, March 2023).

Some key informants stated concern that peace officers and law enforcement officers would continue to interact with youth for suspected possession of cigarette, tobacco, and vapor products regardless of the legislative outcome of ESSB 5365. Key informants stated that youth of color, youth with mental health diagnoses, youth with disabilities, and LGBTQ+ youth experience higher rates of enforcement officer interaction, and stated that legal removal of peace officer authority to detain and/or issue a class 3 civil infraction may not completely eliminate officer interactions, particularly for marginalized youth (personal communications, March 2023). Key informants' confusion about the interpretation of ESSB 5365 Sections 2(3) and 8 contribute to the possibility of continued officer interactions.

ESSB 5365 states that enforcement officers issuing citations for purchase, use, or possession of cigarette, tobacco, or vapor products would be required to collect demographic information about youth. LCB currently collects name and age when they detain a youth suspected of being under 18 years old and purchasing, using, or possessing cigarette, tobacco, or vapor products. Key informants representing LCB shared concern that demographic data collection during detainment could escalate the interaction between youth and enforcement officers (personal communication, LCB, March 2023). Similarly, key informants from the Washington State Department of Health (DOH) also expressed concern that demographic data collection during detainment could lead to inaccurate reporting and create data privacy concerns (personal communication, DOH, March 2023). Key informants also stated that ESSB 5365 does not specify what data is needed or how it would be used (personal communication, LCB, March 2023). Finally, key informants representing LCB stated that enforcement officer training and education around youth demographic data collection would be needed for successful implementation of this bill provision (personal communication, LCB, March 2023).

The majority of notices of infraction for purchase, use, or possession of cigarette, tobacco, or vapor products are likely issued by peace officers, not LCB enforcement officers, in Washington State. Under ESSB 5365, youth may still interact with LCB enforcement officers if the officer has reasonable grounds to believe they are under 18 years old, and believed to have purchased, attempted to purchase, or are in possession of cigarette, tobacco, or vapor products. These interactions carry potential for escalation and civil legal outcomes. However, we have made the informed assumption that limiting the circumstances in which youth may be detained for purchase, use, or possession of cigarette, tobacco, or vapor products will reduce interaction with enforcement officers in some circumstances for some youth.

Will reducing interaction with enforcement officers in some circumstances for some youth improve health outcomes for these youth?

There is very strong evidence that reducing interaction with enforcement officers in some circumstances for some youth improves health outcomes for these youth.

Youth perceptions of enforcement officers can affect the outcomes of encounters with officers.³¹ In a study that analyzed data from 3,245 youth across 7 U.S. cities, results showed that regardless of race/ethnicity, youth who were stopped or arrested and were not satisfied with the way they were treated by police had more negative outcomes, as compared to youth who did not have police contact.³¹ Further, the study showed that, “compared with [w]hite youth, youth of color have higher levels of police contact and tend to be less satisfied with their treatment”.³¹

Researchers have stated, “[d]espite current media attention, acrimonious relations between law enforcement and individuals of color are not a 21st-century phenomenon.”³² One study examined youth perceptions of law enforcement from 1976 through 2016 over time using self-reported surveys of 12th grade students in the 48 contiguous U.S. states.³² The data indicate white youth have consistently perceived law enforcement the most positively and had the least worry about crime, followed by Hispanic/Latinx then Black youth.³² The study also found that youth perceptions of law enforcement reached an all-time low in the late 2010’s, and gaps in perception among racial/ethnic groups appear to be growing.³² The authors stated that the reported perceptions may be “attributable to the historical climate and national conversations surrounding unjust policing”.³²

A systematic review of 29 articles examining the impacts of police interactions on health outcomes concluded that “police exposure should be considered a critical determinant of health.”³⁰ The review found that the settings of police exposure for youth varied widely (grade schools, historically white colleges, neighborhoods, streets, parks, etc.).³⁰ In studies that quantitatively examined health outcomes, police exposure was associated with poor mental health outcomes (e.g., poor public regard, sadness, anger, externalizing behaviors, fear, psychological distress, and feelings of impaired safety), risk behavior (e.g., intentions to have sex, number of anal sex partners, number of overall sex partners), and substance use (e.g., police exposure among boys was associated with smoking).³⁰ Qualitative studies found themes related to police exposure and psychological distress, maladaptive coping, vicarious impact, role confusion, risk taking, impairment of future orientation, inability to engage in prosocial activities, maltreatment and vulnerability to violence.³⁰ Research also shows that “policing in schools is associated with poor test scores and dropout.”³⁰

Overall, there is very strong evidence that reducing youth detainment and interactions with enforcement officers would improve health outcomes for these youth.

Will improving health outcomes for some youth impact equity?

There is unclear evidence how ESSB 5365 may impact health inequities. While the bill will likely reduce interactions with enforcement officers for some youth under 18 years old, the provisions of ESSB 5395 will not eliminate all potential for interactions with enforcement officers. Due to inequities caused by racism in the tobacco industry, enforcement, and legal systems and continued potential for interaction with enforcement officers, evidence suggests that youth of color and other marginalized youth may continue to disproportionately interact with enforcement officers, even if they are not cited for a civil infraction. Therefore, it is unclear how modifying the process for detainment so that only an LCB enforcement officer may detain youth under 18 years old for purchasing, using, or possessing cigarette, tobacco, or vapor products when observed within 100 feet of a licensed cigarette, tobacco, or vapor product retailer may impact equity.

The American Academy of Pediatrics states that structural factors contribute to youth tobacco and vapor product use, including: 1) Targeted marketing by the tobacco industry; 2) Geographic distribution of tobacco retail outlets; 3) Industry development of novel tobacco products that appeal to youth; 4) Lack of enforcement of age-of-sale laws; 5) Inequities in health insurance, care, and cessation services; and 6) Socioeconomic stressors.³³ They noted that, “[t]he tobacco industry has a long history of targeted marketing to specific populations including (but not limited to) racial/ethnic groups, LGBTQ+ communities, and young people ([e.g.], promoting menthol cigarettes to Black communities, making tobacco seem cool or attractive to youth, and promoting products through direct marketing and social media promotion).”³³

Evidence shows that youth, communities of color, LGBTQ+ people, and people living in urban areas are more likely to be exposed to cigarette, tobacco, and vapor product advertising.³⁴⁻³⁶ The impact of disproportionate rates of marketing to marginalized communities is apparent in rates of Washington State youth cigarette, tobacco, and vapor product use. Data from the 2021 Washington State Healthy Youth Survey results indicate that lifetime use of both cigarettes and e-cigarettes/vapor products among 8th and 10th graders is higher among American Indian or Alaska Native and multi-racial students than their peers.³⁸ Healthy Youth Survey data also show higher rates of lifetime cigarette and e-cigarette/vapor product use among 8th, 10th, and 12th grade students identifying as gay and lesbian, compared to their straight counterparts.³⁸ Finally, female students in grades 8, 10, and 12 reported higher rates of lifetime cigarette and e-cigarette use, compared to their male counterparts.³⁸

Inequities due to racism

In addition to experiencing inequitable exposure to tobacco advertising and use of cigarette, tobacco, and vapor products, youth of color are also more likely to have more interaction and heightened severity of interaction with enforcement officers. It is well-established by a large body of evidence that systemic racism contributes to inequities in the U.S. legal systems, including in the juvenile legal systems.³⁹ Though not specific to the civil legal system, research on disproportionality in the juvenile criminal legal system has shown disproportionality at all

steps of the process.⁴⁰ Overall, “youth of color are overrepresented at many stages of the juvenile [criminal legal] system as compared with their presence in the general population.”⁴⁰ The U.S. Department of Justice has stated that juvenile disproportionate minority contact “is evident at nearly all contact points on the juvenile [criminal legal] system continuum”⁴⁰ including at arrest, referral, diversion, detention, filings, findings, probation, confinement, and transfer to adult court.^{39,41-43} Nationally, Black youth are more likely to be arrested, referred to juvenile court, processed, sent to secure confinement, and transferred to adult facilities than white youth.⁴⁰ While these data are not specific to youth who receive a notice of infraction for purchasing, using, or possessing cigarette, tobacco or vapor products, this research contributes to evidence that youth of color experience higher rates of interactions with law enforcement.

Law enforcement agencies in Washington State do not collect data related to detainment of youth for potential purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, WASPC, March 2023). LCB enforcement officers may report youth detainment; however, race/ethnicity information is not currently collected or recorded by LCB enforcement officers when they detain youth under 18 years old for purchase, use, or possession of cigarette, tobacco, or vapor products (personal communication, LCB, March 2023). Therefore, it is not possible to determine from these data whether youth of color may be disproportionately detained. Key informants have stated that youth of color are more likely to be detained or questioned by law enforcement officers for suspected purchase, use, and possession of cigarette, tobacco, and vapor products, as compared to their white peers (personal communications, March 2023). This has also been examined in research, which shows that in practice, PUP laws are not enforced to the same degree across all youth. Data from the Texas Youth Tobacco Survey show differential enforcement based on race/ethnicity, where Black and Hispanic youth had a higher probability of being issued a citation than their peers.⁴⁵ Further, experiences between enforcement officers and youth of color escalate faster and in more dangerous and violent ways as compared to their white counterparts (personal communications, March 2023).

Research shows that “Black youth in the U.S. experience contact with the police as early as 8 years old, and by age 24 years, they have nearly 9-fold the number of encounters with police as their [w]hite counterparts. Furthermore, Black youth are more likely to experience use of force and 5-fold as likely to experience injury during these interactions.”³⁰ One researcher examining the role of age and race on criminal legal system involvement stated that, “[B]lack youths’ perceptions of law enforcement are shaped by the vicarious and collective experiences of their friends and family members”⁴⁴ and “[g]iven the frequent and disproportionate arrest of [B]lack Americans, it is hard to find a [B]lack child who does not have a friend or relative who has not been arrested or ‘known to police.’”⁴⁴

Inequities in interactions with law enforcement are inter-related with and exacerbated by racism. Researchers have noted that, “the intricacies of racial [inequities] in the [juvenile criminal legal system] are difficult to study because of the close relationship between crime and many of the social factors affecting communities in which [youth of color] are likely to be raised.”⁴¹ For example, youth of color are more likely to experience higher financial poverty rates and lower socioeconomic status, to attend schools with zero-tolerance policies and law enforcement presence on campus, and to experience parental incarceration due to inequities in the larger criminal legal system.^{39,41}

Inequities by geography

Living near tobacco retailers is associated with higher rates of tobacco use, lower rates of quitting tobacco products, and higher rates of youth initiation of tobacco product use.³⁶ Tobacco retailers are concentrated in areas near youth, areas with high population density, in low income neighborhoods, and in counties with a higher proportion of Black residents.³⁶ A study that examined tobacco retailers across 30 U.S. cities found that “on average, 63% of public schools were located within 1,000 feet of a tobacco retailer, the lowest-income neighborhoods had nearly five times more tobacco retailers than the highest-income neighborhoods, and 70% of residents across the 30 cities lived within a half mile of a tobacco retailer.”³⁶ Further, national-level data show that approximately 70% of tobacco retailers are located within 1,000 feet of one another.³⁶ Studies show similar density patterns of e-cigarette retailers.³⁶

Inequities by geography are exacerbated by intersectionality with race/ethnicity: “Given the realities of residential patterns by race, [differences in arrest rates by race for the same behaviors] may be reflected in higher arrest rates of [youth of color] than white youth for some offenses. As a result, juveniles behaving in the same way—for example, hanging out late at night—will be treated differently based on where they live, not on how they behave.”⁴⁰ Research has shown that law enforcement practices may vary by jurisdiction.³⁹ Law enforcement “who interact with youth have little understanding of adolescent development and little training in appropriate strategies for interacting with youth,”⁴⁴ and “police tend to patrol urban [neighborhoods of color] more aggressively than suburban areas where few [youth of color] reside.”³⁹

Lastly, while the bill will likely reduce interaction with enforcement officers for some youth, the provisions of ESSB 5365 will not eliminate all potential for interaction. Youth under 18 years old could still be detained for or issued a civil infraction for purchase, use, or possession of cigarette, tobacco, and vapor products. Evidence from key informants as well as research on disproportionality in the juvenile criminal legal system research, in interactions with law enforcement, and in PUP law enforcement, suggest that youth of color and other marginalized youth may continue to be disproportionately detained for potential purchase, use, or possession of cigarette, tobacco, or vapor products. Therefore, the impact of ESSB 5365 on health inequities is unclear.

Pathway 2: Class 3 civil infraction

Will amending the penalties of a class 3 civil infraction for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products impact current penalties for youth under 18 years old issued a notice of infraction for purchasing, using, or possessing cigarette, tobacco, or vaping products?

We have made the informed assumption that amending the penalties of a class 3 civil infraction for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products will maintain a class 3 civil infraction and current penalties for youth under 18 years old. This informed assumption is based on current statute and information from key informants.

Currently, under RCW 70.155.080¹¹ and RCW 70.345.140,¹² a youth under 18 years old who is issued a class 3 civil infraction for purchasing, using, or possessing cigarette, tobacco, or vapor

products is subject to a fine, or participation in up to 4 hours of community restitution, or both. The court is also authorized to require participation in a smoking cessation program.

There are 4 ways youth can respond to a notice of a class 3 civil infraction: 1) Pay the full amount of the civil monetary penalty; 2) Admit to the infraction and indicate that the fine cannot be paid; 3) Contest the infraction by requesting a court hearing; or 4) Mitigate and explain the circumstances of the infraction by requesting a court hearing (personal communication, DMCJA, March 2023). As part of any class 3 civil infraction, a fine of \$50.00 is automatically generated as part of a notice of infraction and appears on the notice of infraction issued to youth (personal communication, District and Municipal Court Judges Association [DMCJA], March 2023). [RCW 3.72.020](#) allows for the usual assessment and collection of additional fines and fees.¹⁷ A key informant representing DMCJA stated that, after assessments, the fine amount that would appear on the notice of infraction will be \$103.00 for a class 3 civil infraction for a youth under 18 purchasing, using, or possessing cigarette, tobacco, or vapor products (personal communication, DMCJA, March 2023). About 40% of youth respond to the notice of infraction by paying the amount of the civil monetary penalty in full (unpublished data, AOC, March 2023).

A youth may also respond to the notice of infraction by requesting a court hearing to contest the infraction or to explain the circumstances of the infraction. Court hearings may be held in any case with a result other than “Paid,” suggesting that up to 60% of youth who were issued a class 3 civil infraction for purchasing, using, or possessing cigarette, tobacco, or vapor products could have appeared in court (unpublished data, AOC, March 2023). About 42% of youth receive a case result of “Committed,” indicating that a youth: 1) Did not respond to the notice of infraction in the time allowed or did not appear for a scheduled hearing; 2) Admitted to committing the infraction (whether or not they have the ability to pay); or 3) Was found to have committed the infraction after a hearing where they contested the infraction (personal communication, DMCJA, March 2023). Based on available data, is not possible to determine what percentage of youth met each of these scenarios.

If a youth requests a court hearing and appears in court, a municipal or district youth court judge may order participation in up to 4 hours of community service and/or require youth to participate in a smoking cessation program in lieu of the fine (personal communication, DMCJA, March 2023).^{11,12} Additionally, if a monetary penalty cannot be reasonably paid by the youth due to a lack of financial resources, RCW 3.72.020 allows that “the court may convert any or all of the monetary penalty into community service [...]”¹⁷ Based on available data, it is not possible to determine what percentage of youth ultimately paid the civil monetary penalty in full or participated in community service or a smoking cessation program in lieu of a fine.

Any fine or monetary penalty, including civil monetary penalties, are considered legal financial obligations (LFOs) (personal communication, Administrative Office of the Courts [AOC], March 2023). LFOs incurred as part of a civil infraction become due and payable, but are not reflected on youth’s criminal history and do not become the responsibility of the youth’s parent (personal communication, AOC, March 2023). If a youth fails to respond to a notice of infraction, does not appear in court, or does not pay the LFO in full, civil monetary penalties may go to collections (personal communication, DMCJA, March 2023). The fine would then be assessed interest on

the unpaid balance (personal communication, AOC, March 2023). Civil monetary penalties are enforceable for 10 years (personal communication, AOC, March 2023).

Lastly, under current law, a court file is not generated for a youth under 16 years old that committed a class 3 civil infraction and paid the civil monetary penalty in full or completed participation in a youth court program.¹⁶ Civil infractions do not generate conviction data for youth aged 16 or 17 years (personal communication, DMCJA, March 2023). This suggests that youth civil infractions may not result in the same long-term implications as criminal legal offenses.

ESSB 5365 would maintain a class 3 civil infraction for a youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products. While ESSB 5365 would eliminate the fine associated with purchasing, using, or possessing cigarette, tobacco, or vapor products, the fine would continue to be automatically generated as part of the notice of infraction and a youth would have to appear in court to have this fine waived (personal communication, DMCJA, March 2023). A key informant representing district and municipal court judges noted that response to a notice of infraction is at the discretion of a youth, and youth cannot be compelled or required to request a court hearing or appear before a court (personal communication, DMCJA, March 2023). Therefore, fines are automatically generated as part of a notice of infraction so that there is a way to resolve the infraction (personal communication, DMCJA, March 2023). Since about 40% of youth currently pay the civil monetary penalty in full without appearing in court (unpublished data, AOC, March 2023), some youth may continue to pay the civil monetary penalty in response to the notice of infraction if they were not aware that they could have the fine waived or if they were unable to appear in court (personal communication, DMCJA, March 2023). Youth under 18 years old may experience challenges to appearing in court, including taking time off from school or work, transportation (especially for youth under 16 years old), and involvement from a parent/guardian. Therefore, it is not possible to determine whether removing the fine from the statute would change status quo.

In addition, ESSB 5365 would maintain that a youth may be subject to participation in up to 4 hours of community service in lieu of a fine. ESSB 5365 also amends existing law to state that youth may be subject to referral to a smoking cessation program at no cost. A key informant representing district and municipal court judges stated this referral would likely be information-sharing only and would require judges to learn about and receive information about youth smoking cessation programs to share with youth (personal communication, DMCJA, March 2023). ESSB 5365 does not specify how judges may receive information about smoking cessation programs to share with youth, what type of information must be provided with this referral, or what type of program youth may be referred to. Overall, since youth may only be referred to a smoking cessation program if they appear in court and youth may currently be required to participate in a smoking cessation program, it is not possible to predict what percentage of youth may be referred to a smoking cessation program under provisions of ESSB 5365 or whether this will be a change from status quo.

Overall, ESSB 5365 makes some amendments to penalties for youth issued a notice of infraction for purchasing, using, or possessing cigarette, tobacco, or vapor products. However, since youth may continue to pay civil monetary penalties or be subject to community service and referral to a

smoking cessation program, we have made the informed assumption that these amendments will maintain a class 3 civil legal infraction and current penalties for youth under 18 years old who are issued a class 3 civil infraction for purchasing, using, or possessing cigarette, tobacco, or vapor products.

Will maintaining a class 3 civil infraction and current penalties for youth under 18 years old who are issued a notice of infraction for purchasing, using, or possessing cigarette, tobacco, or vapor products impact health outcomes?

There is unclear evidence how maintaining a class 3 civil infraction and current penalties for youth under 18 years old who are issued a notice of infraction for purchasing, using, or possessing cigarette, tobacco, or vaping products may impact health outcomes. The maintenance and enforcement of laws for youth under 18 years old purchasing, using, or possessing cigarette, tobacco, or vapor products may impact potential health outcomes.

Laws that include an enforcement officer penalizing youth for cigarette, tobacco, or vapor products are referred to as purchase, use, or possession (PUP) laws. In general, research indicates that consequences rooted in punishment may temporarily suppress behavior, but do not achieve long-term behavior change.⁴⁶ Research indicates that PUP laws may not be effective at reducing youth tobacco use, and divert resources away from strategic tobacco control approaches.⁴⁶ Further, the tobacco industry has been active in supporting PUP laws, and researchers state this may be associated with efforts to prevent the passage of more effective tobacco control measures.⁴⁶ One study that examined data from Utah and South Dakota pointed out that “police may find it easier to enforce laws against [youth] than retailers, [given the] disproportionate use of enforcement resources focused on youth”.⁴⁶ A California study found similar results, where 91% of officers issued citations against youth while only 71% had issued citations against retailers.⁴⁶

Studies have shown that the introduction of PUP laws has led to enforcement officers citing youth rather than retailers and disproportionate rates of enforcement, where certain youth are selectively targeted and cited.^{45,46} Key informants representing health and tobacco prevention agencies stated that any reductions in PUP laws are beneficial for the overall health of Washingtonians, and that penalizing youth (as opposed to retailers and/or the tobacco industry) contributes to harm (personal communications, March 2023).

The impact PUP laws have on youth smoking rates is unclear. Research evaluating the effectiveness of PUP laws is relatively outdated and does not account for the introduction of vapor products to the market. Generally, researchers have stated that PUP laws do not have the necessary features present for youth behavior change.⁴⁶ In addition, PUP law studies include methodological concerns. Researchers have suggested that youth may not truthfully report cigarette smoking during PUP law studies due to fear of punitive measures,^{46,47} “especially where laws are more strongly enforced”.⁴⁶

A 2001 study conducted in Florida compared communities with low levels of PUP enforcement to high levels of PUP enforcement and found that youth in the high enforcement areas were more aware of PUP laws, and that students who already smoke and live in low enforcement areas were less likely to have bought cigarettes from stores.⁴⁶ In this study, “[a]fter controlling for race and

grade, being in a high [enforcement] county was significantly associated with a reduced likelihood of 30 day tobacco smoking.”⁴⁶

A separate 2000 study evaluated smoking rates among youth cited for PUP in Florida.⁴⁶ In this study, the parent/guardian was required to appear with the youth in court and both the youth and adult were required to watch a video on health effects of smoking.⁴⁶ Then, the judge ordered fines, community service, or mandated a tobacco education class for the youth.⁴⁶ Youth were required to track their program compliance.⁴⁶ When at the initial court appearance, “16% of teens reported they had not used tobacco since being cited, 28% had used less tobacco, 52% had not changed, and 5% used more”.⁴⁶ At 2-month follow-up, “28% claimed to have not used tobacco since being cited, 29% said they used less, 41% had not changed, and 2% used more”.⁴⁶

In a separate 2001 study of Minnesota adolescents cited for PUP, neither youth who paid a fine nor youth who attended a smoking cessation program had significant decreases in smoking rates after 3-month follow-up.⁴⁶ These same youth also showed no significant changes in readiness to quit smoking.⁴⁶

Research has also suggested that fines imposed through PUP laws are usually paid by the parents rather than the youth.⁴⁶ However, “some parents who are unconcerned about smoking by their children become angry because they do not want to pay the fine or take time to have their child attend community service. In these situations, PUP laws may conceivably exacerbate already problematic parent–child relationships. On the other hand, some parents are motivated to take more interest in their child’s smoking because of the threat of a penalty.”⁴⁶

A 2008 randomized community control trial among 24 towns in Northern Illinois explored the ways in which PUP laws may influence youth smoking behaviors.⁴⁷ The control group involved reduction to youth tobacco access while the experimental group included both youth tobacco access reduction in combination with fining youth for use or possession of tobacco.⁴⁷ Results show that rates of smoking increased significantly less quickly among adolescents in the experimental group.⁴⁷ The researchers did not control for neighborhood media anti-smoking activities, price of tobacco,⁴⁷ or for disproportionate enforcement among officers. The authors pointed out that youth reporting of smoking may have been influenced by their perceptions of punitive outcomes.⁴⁷

In sum, PUP laws may not be effective at influencing long-term youth behavior change and may not reduce youth tobacco use. Research indicates that PUP laws are disproportionately enforced and divert resources away from affecting retailer behavior change. Overall, there is unclear evidence how maintaining a class 3 civil infraction and current penalties for youth under 18 years who are issued a notice of infraction for purchasing, using, or possessing cigarette, tobacco, or vaping products may impact health outcomes.

Pathway 3: Monetary penalties for retailers

Will allowing LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth under 18 years old result in increased monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old?

We have made the informed assumption that allowing LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old will lead to increased monetary penalties for some retailers. This assumption is based on current statute, research on monetary penalties, available Washington State data on compliance, and information from key informants.

Under current statute outlined in [RCW 70.155.100](#), LCB may impose monetary penalties against cigarette and tobacco product retailer licensees and vapor products retailer licensees for selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old.⁸ The penalties may not exceed the following: \$200 for the first violation within any 3-year period; \$600 for the second violation within any 3-year period; \$2,000 and suspension of the license for 6 months for the third violation within any 3-year period; and \$3,000 and suspension of the license for 12 months for the fourth violation within any 3-year period.⁸

Key informants from LCB stated that the Tobacco Tax and Vapor Unit consists of 1 lieutenant and 5 officers who complete LCB tobacco and vapor compliance activities across Washington State (personal communication, LCB, March 2023). There are a few ways tobacco retailers are currently surveilled for compliance with RCW 70.155.100. Regardless of compliance method, LCB officers have discretion over which neighborhoods and which retailers they decide to monitor for compliance (personal communication, LCB, March 2023). One method is through voluntary public participation; LCB receives complaints or tips from the public regarding potential retailer violations. Upon receiving this information, LCB enforcement officers visit the location to further monitor for compliance. Another method is through compliance checks with youth. LCB works with youth and emerging adults under 21 years of age to conduct compliance activities, where a designated youth or emerging adult attempts to purchase cigarette, tobacco, or vapor products from a retailer in a controlled experiment. If the retailer sells or gives product to the youth or emerging adult, they can be issued a violation. Further, LCB has authority to work with local county health departments or districts and local law enforcement agencies to conduct random, unannounced inspections to assure compliance.¹⁰

Tribal retail stores are not required to be licensed by LCB, and LCB enforcement officers do not have jurisdiction over tribal tobacco retailers located on tribal land (personal communication, LCB, March 2023). Similarly, LCB enforcement officers may not interact with tribal members or youth under 18 years old for potential purchase, use, or possession of cigarette, tobacco, or vapor products^d (personal communication, LCB, March 2023). In some instances, tribes may request LCB to join their law enforcement agencies in conducting compliance checks (personal

^d Traditional and commercial tobacco are different in the ways they are planted, grown, harvested, and used. Traditional tobacco is and has been used in sacred ways by Indigenous communities and tribes, while commercial tobacco is manufactured with chemical additives for recreational use and profit, resulting in disease and death. Throughout this HIR, “tobacco” is used within a commercial context.²

communication, LCB, March 2023). Key informants representing LCB also stated that, in rare occurrences, tribal retailers have been licensed and LCB enforcement officers have conducted a compliance check at a tribal retailer (personal communication, LCB, March 2023).

ESSB 5365 would increase the maximum monetary penalties LCB may impose against cigarette and tobacco products retailer licensees and vapor products retailer licensees for violations of provisions related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old. The penalty increases would not exceed the following: \$1,000 for the first violation within any 3-year period; \$2,500 for the second violation within any 3-year period; \$5,000 and suspension of the license for 6 months for the third violation within any 3-year period; and \$10,000 and suspension of the license for 12 months for the fourth violation within any 3-year period.

Research shows that tobacco product retailer behaviors may differ based on structural factors such as geography, and the socioeconomic status, race, and ethnicity of neighborhood residents. A cross-sectional study of 108,614 U.S. Food and Drug Administration (FDA) inspection records found that the likelihood of failing an underage tobacco buy inspection was positively associated with the proportion of American Indian, Black, and Latino residents and residents less than age 65 under the poverty line in a neighborhood.⁸⁹ In contrast, the likelihood of failing an inspection was negatively associated with the proportion of white residents and residents aged 10 through 17.⁸⁹ The authors found, “[f]or every 10-percentage point increase in the proportion of Black residents, the odds of a retailer selling to [youth] increased by 7%...”⁸⁹ A separate study in Florida found that “...more tobacco sales to youth occurred in rural (vs urban) areas, in census blocks with higher proportions of Hispanic residents, and in neighborhoods with lower per capita income”.⁹⁰

At a national level, enforcement officers are encouraged to surveil neighborhoods who are more likely to be in violation. Since evidence indicates that retailers in neighborhoods with residents with lower socioeconomic status and higher proportions of nonwhite residents are more likely to be in violation, and since LCB enforcement officers carry discretion over which neighborhoods and which retailers they decide to monitor for compliance, it is likely that enforcement officers will conduct compliance activities in these areas. Taken together, we have made the informed assumption that allowing LCB to increase monetary penalties on licensed retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old will lead to increases in monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old.

Will increases in monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old impact retailer sales of cigarette, tobacco, and vapor products to youth under 18 years old?

There is unclear evidence for how increasing monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults

under 21 years old may impact sales of cigarette, tobacco, and vapor products to youth under 18 years old.

The efficacy of compliance checks on retailer behavior depends on implementation procedures. National researchers who have examined the enforcement of the Family Smoking Prevention and Tobacco Control Act have pointed to deterrence doctrine to explain the ambiguous utility of monetary penalties against retailers.²⁰ They state, “[i]n the law, deterrence doctrine argues that to be effective, penalties must be certain, swift and severe enough to outweigh the benefit of non-compliance. The lack of appropriate escalation and timeliness of civil monetary penalties [...] and no-tobacco-sale orders (NTSOs) undercuts these basic principles.”²⁰

As of February 2023, there were 5,795 licensed tobacco product retailers and 3,986 vapor product retailers in Washington State (unpublished data, LCB, March 2023). The statewide compliance rate for tobacco and vapor sales was 92% in 2020, 74% in 2021, and 82% in 2022 (unpublished data, LCB, March 2023). Key informants from LCB stated that the majority of monetary penalties imposed on Washington State retailers for violations due to selling or giving cigarette, tobacco, or vapor products to youth or emerging adults are issued to first-time violators (personal communication, LCB, March 2023). Key informants representing health and tobacco prevention agencies stated that retailer behavior change is more greatly modified in response to the possibility of retailer license revocation, as compared to violations that lead to retailer monetary penalties (personal communications, March 2023). LCB stated that they observe the most noticeable changes in retailer behavior between the second and third violation, which is after the retailer has been issued several monetary penalties, and before their license is suspended (personal communication, LCB, March 2023), indicating license revocation may be a stronger deterrent than monetary penalties. In addition, tobacco product sales comprise large proportions of retailer sales revenue, particularly for small retailers (personal communications, March 2023), which may also indicate that license revocation may be a stronger deterrent. LCB also stated that retailer sale behavior often depends on whether the retailer recognizes and is familiar with the youth requesting a product; retailers will often sell to local youth, but will not sell to unfamiliar youth, thus limiting the efficacy of controlled compliance checks with youth (personal communication, LCB, March 2023).

Based on available literature on the effectiveness of retailer monetary penalties, available data from LCB, and information from key informants, there is unclear evidence for how increasing monetary penalties for some retailers for violations related to selling or giving cigarette, tobacco, or vapor products to youth and emerging adults under 21 years old may impact sales of cigarette, tobacco, and vapor products to youth under 18 years old.

Other considerations

This Health Impact Review focused on provisions of the bill with the most linear pathway to health outcomes and equity. Under current law, the court is authorized to require a youth who is issued a class 3 civil infraction for purchasing, using, or possessing cigarette, tobacco, or vapor products to participate in a smoking cessation program.^{11,12} Provisions of ESSB 5365 would amend this and state that a youth who requests a court hearing and appears in court may be subject to referral to a smoking cessation program at no cost. Key informants representing district and municipal court judges stated that this referral would likely be information-sharing

only (personal communication, DMCJA, March 2023), and ESSB 5365 does not specify how judges may receive information about smoking cessation programs to share with youth, what type of information must be provided with this referral, or what type of program youth may be referred to. There is also limited evidence for effective youth cessation programming and randomized controlled trials on youth cessation programming do not indicate strong evidence regarding whether mandatory smoking cessation programming is effective.⁴⁸ Therefore, this pathway was not included in the logic model.

Historically, Washington State's Commercial Tobacco Prevention and Control Program, including cessation programming, has been underfunded and under-resourced (personal communications, March 2023). While Washington State receives approximately \$510 million each year from tobacco taxes and Master Settlement Agreement payments, much of that revenue is not received for preventing tobacco or vapor product use (personal communication, DOH, March 2023). For example, for federal grant Fiscal Years 2012 through 2022, the Commercial Tobacco Prevention and Control Program received approximately \$1.6 million annually for prevention (personal communication, DOH, March 2023). In 2023, the U.S. Centers for Disease Control and Prevention (CDC) recommended Washington State invest approximately \$72.5 million annually to effectively prevent tobacco and vapor product use (personal communication, DOH, March 2023).

There are limited smoking cessation resources or programming available to support youth in Washington State (personal communication, DOH, March 2023). While emerging adults over 18 years old have access to and may purchase over-the-counter smoking cessation products, youth under 18 years old must receive a prescription from a healthcare provider to access any smoking cessation medications, including medications that are available over-the-counter.³³ Lack of health insurance or access to a healthcare provider may result in barriers in accessing smoking cessation medications for some youth.³³ Some pediatricians and healthcare providers are trained to talk with youth and parents/guardians about using tobacco and vapor products, but there has been little statewide training for providers and access to providers who have specific training in youth smoking cessation is limited and may vary across the state (personal communication, DOH, March 2023).

Youth may access behavioral support and counseling through an anonymous texting program, an app (2Morrow Health) or, for youth over 13 years old, through the Washington State Quitline via phone or digital counseling (personal communication, DOH, March 2023). Youth who access these programs may receive lessons, counseling, or coaching to support their efforts to quit tobacco or vapor products (personal communication, DOH, March 2023). Key informants representing DOH shared that some youth have experienced barriers to accessing these resources, including language barriers/use of third-party translators, discomfort with sharing private information, and cultural differences (personal communication, DOH, March 2023). Limited programmatic funding is connected to the limited availability of culturally and linguistically appropriate youth smoking cessation programming (personal communication, DOH, March 2023).

DOH contracts with regional and priority population partners to prevent youth tobacco and vapor product use. These partners may offer direct services and counseling to support smoking

cessation locally or regionally (personal communication, DOH, March 2023). However, these partners receive little funding dedicated to tobacco cessation and primarily work with healthcare providers to talk with youth and parents/guardians (personal communication, DOH, March 2023).

Overall, there is limited evidence for effective youth smoking cessation programming. The American Academy of Pediatrics stated that tobacco dependence is a severe addiction and “youth are uniquely susceptible to nicotine because their brains are still developing” and “nicotine can harm parts of the brain that control attention, learning, mood, and impulse control.”³³ Research has also indicated that 95% of adult smokers begin smoking before they turn 21⁹¹ and early smoking onset is associated with greater likelihood of addiction and decreased likelihood of cessation.^{55,92}

Some evidence indicates that youth tobacco cessation programming may not be effective in reducing youth cigarette, tobacco, or vapor product use. In a review of 68 youth tobacco cessation interventions, the average cessation rate among program participants was 12%, compared to 7% cessation rate in the control groups.⁴⁸ Moreover, various randomized controlled trials on youth cessation programming do not indicate strong evidence regarding whether mandatory smoking cessation programming is effective.⁴⁸ Key informants also noted that referral to a smoking cessation program may not lead to participation in a smoking cessation program, especially if youth view the referral as punitive or mandatory (personal communications, March 2023).

Cessation treatment and programming options should also be tailored to a youth’s level of tobacco use, dependence, and readiness for change.^{33,93} One promising practice for youth smoking cessation is counseling and treatment by a licensed healthcare provider (e.g., pediatricians).^{33,93} In 2020, the U.S. Preventive Services Task Force conducted a review of literature on benefits and harms of primary care interventions regarding youth tobacco use prevention and cessation, which included e-cigarettes in their analysis.⁴⁹ The Task Force published a Recommendation Statement indicating that while tobacco prevention programming for youth have a moderate benefit on health outcomes, there is insufficient evidence to determine the effects of tobacco cessation programming for youth who already smoke.⁴⁹

ESSB 5365 does not specify how judges may receive information about smoking cessation programs to share with youth, what type of information must be provided with this referral, or what type of program youth may be referred to. In addition, there is limited evidence for effective youth cessation programming and mandatory smoking cessation programming may not be effective.⁴⁸ Therefore, this potential pathway to health and equity was not included in the logic model.

Annotated References

1. **Definitions, RCW 70.155.010 RCW 70.155.010(2019).**

RCW 70.155.010 defines "Tobacco product" as a product that contains tobacco and is intended for human use.

2. **Public Health Law Center. Youth Purchase, Use, or Possession Penalties (PUP). *Minnesota Commercial Tobacco Point-of-Sale Policy Toolkit*2022.**

The Public Health Law Center compiled a 1-pager on youth purchase, use, or possession penalties (PUP). Included on the document is the distinction between traditional and commercial tobacco. Traditional and commercial tobacco are different in the ways they are planted, grown, harvested, and used. Traditional tobacco is and has been used in sacred ways by Indigenous communities and tribes, while commercial tobacco is manufactured with chemical additives for recreational use and profit, resulting in disease and death. Throughout this HIR, "tobacco" is used within a commercial context.

3. **Definitions, RCW 70.157.010(1999).**

RCW 70.157.010 defines "Cigarette" as any product that contains nicotine, is intended to be burned or heated under ordinary conditions of use, and consists of or contains: Any roll of tobacco wrapped in paper or in any substance not containing tobacco; Tobacco, in any form, that is functional in the product, which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers as a cigarette; Any roll of tobacco wrapped in any substance containing tobacco which, because of its appearance, the type of tobacco used in the filler, or its packaging and labeling, is likely to be offered to, or purchased by, consumers as a cigarette.

4. **Definitions, RCW 70.345.010 RCW 70.345.010(2019).**

RCW 70.345.010 defines "Vapor product" as any noncombustible product that may contain nicotine and that employs a heating element, power source, electronic circuit, or other electronic, chemical, or mechanical means, regardless of shape or size, that can be used to produce vapor or aerosol from a solution or other substance. "Vapor product" includes any electronic cigarette, electronic cigar, electronic cigarillo, electronic pipe, or similar product or device and any vapor cartridge or other container that may contain 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. "Vapor product" does not include any product that meets the definition of cannabis, useable cannabis, cannabis concentrates, cannabis-infused products, cigarette, or tobacco products.

5. **Definitions, RCW 82.24.010 RCW 82.24.010(2012).**

RCW 82.24.010 defines "Retailer" as every person, other than a wholesaler, who purchases, sells, offers for sale or distributes any one or more of the articles taxed herein, irrespective of quantity or amount, or the number of sales, and all persons operating under a retailer's registration certificate. RCW 82.24.010 defines "Wholesaler" as every person who purchases, sells, or distributes any one or more of the articles taxed herein to retailers for the purpose of resale only. RCW 82.26.010 defines "Distributor" as: Any person engaged in the business of selling tobacco products in Washington State who brings, or causes to be brought into

Washington from without the state any tobacco products for sale; Any person who makes, manufactures, fabricates, or stores tobacco products in Washington State for sale in the state; Any person engaged in the business of selling tobacco products without Washington State who ships or transports tobacco products to retailers in the state, to be sold by those retailers; Any person engaged in the business of selling tobacco products in Washington State who handles for sale any tobacco products that are within the state but upon which tax has not been imposed.

6. Tax imposed—Deposited into the general fund, RCW 82.26.020(2019).

RCW 82.26.020 outlines the taxes imposed for the sale, handling, or distribution of all tobacco products in Washington State

7. Indians—Indian country., WAC 458-20-192 WAC 458-20-192(2001).

WAC 458-20-192 outlines the Washington State Department of Revenue' Washington Administrative Code regarding Indians and Indian Country. Under federal law, Washington may not tax Indians or Indian tribes in Indian country. WAC 458-20-192 clarifies that tobacco tax is imposed on "distributors". Tobacco tax is not imposed on Indian people or tribes who take delivery of the tobacco in Indian country. Effective July 1, 2002, people who handle any tobacco products for sale that are within this state but upon which tax has not been imposed are subject to the tobacco tax. People purchasing tobacco products for resale from Indians who are exempt from the tobacco tax are subject to tobacco tax on the product.

8. Penalties, sanctions, and actions against licensees., RCW 70.155.100 RCW 70.155.100(2006).

RCW 70.155.100 provides authority to the Washington Liquor and Cannabis Board (LCB) to revoke or suspend the license of any retailer if the retailer has violated certain statutes. LCB may impose sanctions against a licensee who is found to sell or give tobacco to a minor or who does not have appropriate tobacco sales prohibition signage posted. Sanctions cannot exceed: \$200 for the first violation within any three-year period; \$600 for the second violation within any three-year period; \$2,000 and suspension of the license for six months for the third violation within any three-year period; and \$3,000 and suspension of the license for 12 months for the fourth violation within any three-year period.

9. Liquor control board authority, RCW 70.155.110 RCW 70.155.110(1993).

RCW 70.155.110 provides authority to LCB to revoke or suspend the license of any retailer or wholesaler in accordance with the provisions of RCW 70.155.100.

10. Enforcement—Authority of liquor and cannabis board—Detention to determine identity and age—Inspections—Products injurious to health, RCW 70.345.160 RCW 70.345.160(2016).

RCW 70.345.160 provides authority to LCB to revoke or suspend the license of any retailer or wholesaler in accordance with the provisions of RCW 70.155.100 and Chapter 70.345 RCW. LCB agents or employees are authorized with the authority to enter businesses where tobacco products are sold for the purpose of enforcing provisions related to tobacco access for minors. A peace officer or enforcement officer of the LCB who has reasonable grounds to believe a person under 18 years of age is purchasing, attempting to purchase, or in possession of tobacco products, may detain that person for a reasonable period of time and in a reasonable manner as is

necessary to determine the person's true identity and date of birth. Tobacco products possessed by persons 18 years of age are considered contraband and may be seized by a peace officer or an LCB enforcement officer. LCB has authority to conduct compliance activities to enforce provisions related to tobacco access for minors.

11. Purchasing, possessing by persons under eighteen—Civil infraction—Jurisdiction., RCW 70.155.080 RCW 70.155.080(2002).

RCW 70.155.080 establishes that a person under 18 years old who purchases or attempts to purchase, possesses, or obtains or attempts to obtain cigarettes or tobacco products commits a class 3 civil infraction and is subject to a fine, or participation in up to 4 hours of community restitution, or both. Municipal and district courts have jurisdiction for enforcement of this statute, and the court is authorized to require participation in a smoking cessation program

12. Purchase or possession by persons under eighteen—Penalty—Jurisdiction, RCW 70.345.140 RCW 70.345.140(2016).

RCW 70.345.140 establishes that a person under 18 years old who purchases or attempts to purchase, possesses, or obtains or attempts to obtain vapor products commits a class 3 civil infraction and is subject to a fine, or participation in up to 4 hours of community restitution, or both. Municipal and district courts have jurisdiction for enforcement of this statute, and the court is authorized to require participation in a smoking cessation program.

13. Youth court creation—Jurisdiction., RCW 3.72.010 RCW 3.72.010(2020).

RCW 3.72.010 establishes district and municipal youth courts and grants youth courts “jurisdiction over civil, traffic, and transit infractions alleged to have been committed by juveniles [aged 16 or 17 years].” District and municipal youth courts may also accept referrals of civil, traffic, and transit infractions alleged to have been committed by juveniles aged 12 through 15 years from a juvenile court diversion unit.

14. Juvenile court—Exclusive original jurisdiction—Exceptions., RCW 13.04.030 RCW 13.04.030(1977).

RCW 13.04.030 states that youth aged 16 or 17 years who commit a civil infraction are under the jurisdiction of district and municipal courts. However, if a youth is also charged with a potential offense or infraction subject to juvenile court jurisdiction that “arise[s] out of these same event or incident, the juvenile court may have jurisdiction of both matters.”

15. Dowell T. The Juvenile Offender System in Washington State, 2020 Edition.2020.

Todd Dowell, Deputy Prosecuting Attorney, Kitsap County is a foremost expert in Washington State juvenile law. The intent of this resource is to provide an overview and explanation of the juvenile justice system in Washington State, and to serve as a resource and teaching tool for prosecutors, defenders, judges, students and others. This resource details the history of the Washington State juvenile justice system, describes how a juvenile may be brought to court, explains juvenile jurisdiction, defines a "juvenile," describes juvenile capacity and competency, outlines juvenile court arraignment, and describes adjudication, disposition, and post-disposition.

16. Traffic infraction, transit infraction, and civil infraction cases—Diversion agreements., RCW 13.40.250(2002).

RCW 13.40.250 states that youth aged 12 through 15 years who are alleged of a civil infraction may have their case diverted, filed in juvenile court, or referred to a district or municipal youth court. For youth aged 12 through 15 years, monetary penalties may not exceed \$100.00 and, at the youth's request, "the court may order performance of a number of hours of community restitution in lieu of a monetary penalty..." Moreover, "[o]ther than filing a petition for termination of the diversion agreement in juvenile court, nothing concerning the [youth's] participation in the youth court program shall be filed in any public court file concerning the [youth's] participation or presence in the youth court program" and "[n]o court case number shall be assigned to the case against the [youth] while [they] participate in the youth court program."

17. Youth court agreement., RCW 3.72.020 RCW 3.72.020(2020).

RCW 3.72.020 states that youth court agreements are a contract "whereby the juvenile agrees to fulfill certain conditions imposed by a youth court in lieu of a determination that the infraction occurred. Such agreements may be entered into only after the law enforcement authority has determined that probable cause exists to believe that a [traffic, transit, or civil infraction] has been committed and that the juvenile has committed it." Relevant to conditions specified for purchasing, using, or possessing cigarette, tobacco, or vapor products: Monetary penalties may not exceed \$100.00. Monetary penalties "assessed and collected [...]" shall be deposited and distributed in the same manner as costs, fines, forfeitures, and penalties are assessed and collected [under relevant laws...]" A key informant representing the District and Municipal Court Judges Association (DMCJA) stated that, after assessments, a \$50.00 monetary penalty would be \$103.00 for a class 3 civil infraction for a youth under 18 purchasing, using, or possessing cigarette, tobacco, or vapor products (personal communication, DMCJA, March 2023). If a monetary penalty cannot be reasonably paid by the youth due to a lack of financial resources, "the court may convert any or all of the monetary penalty into community service [...]" The number of hours of community service in lieu of a monetary penalty shall be converted at a rate of the prevailing state minimum wage per hour." Community service may not exceed 150 hours and may not be performed during school hours.

18. Tworek C., Giovina, G., Cummings, K. M., Hyland, A., Chaloupka, F. . Youth Access Tobacco Possession, Use, and Purchase Laws: Measures of State and Local Enforcement. Bridging the Gap Initiative: Research Informing Policies and Practices for Healthy Youth. Robert Wood Johnson Foundation;2011.

ImpacTeen published a paper on youth tobacco access and PUP law enforcement. This paper is part of the Bridging the Gap Initiative: Research Informing Policies and Practices for Healthy Youth, supported by The Robert Wood Johnson Foundation and administered by the University of Illinois at Chicago. The authors point out that in 1988, 17 states first adopted laws prohibiting the purchase, use, and/or possession of tobacco products.

19. Family Smoking Prevention and Tobacco Control Act, 123 (2009).

The 111th U.S. Congress found that "virtually all new users of tobacco products are under the minimum legal age to purchase such products" and that "tobacco advertising and marketing contribute significantly to the use of nicotine-containing tobacco products by adolescents." For

this and other reasons, "It is in the public interest for Congress to enact legislation that provides the Food and Drug Administration with the authority to regulate tobacco products and the advertising and promotion of such products." Section Chapter IX--Tobacco Products, Section 907. Tobacco Product Standards (a)(1)(A) specifically bans the use of artificial or natural flavor (other than tobacco or menthol) or an herb or spice that is a characterizing flavor of the tobacco product or tobacco smoke in cigarettes. The full text of the Tobacco Control Act is available at <https://www.govinfo.gov/content/pkg/PLAW-111publ31/pdf/PLAW-111publ31.pdf>.

20. Hemmerich N., Jenson D., Bowrey B. L., et al. Underutilisation of no-tobacco-sale orders against retailers that repeatedly sell to minors, 2015-2019, USA. *Tob Control*. 2022;31(e2):e99-e103.

Hemmerich et al. conducted a quantitative content analysis of the FDA's actions taken during efforts to enforce the Family Smoking Prevention and Tobacco Control Act. The researchers sought to: "(1) determine if the FDA was diligently calculating penalties using its own counting methods, (2) identify the proportion of [no-tobacco-sale orders (NTSOs)] that would have been issued earlier if the FDA counted violations as stringently as the Tobacco Control Act allows, and (3) identify the proportion of 'frequently violating retailers' (... defined as those retailers who have received three or more violations in the study period, following the rationale of prior 'three strikes' approaches) that could have received an NTSO but did not". The researchers examined 536,134 inspections that were decided between October 2015 – March 2019. A coding protocol was developed, piloted and revised, and inter-rater reliability was assessed. The researchers found 148 NTSOs and 249,720 unique retailer violations, where 2,095 had three or more violations. The researchers calculated the proportion of NTSOs that could have been issued an NTSO earlier, as well as the proportion of retailers that could have been issued an NTSO compared to the proportion actually issued an NTSO. Results show that 2.6% of NTSOs could have been issued earlier according to the FDA's guidance, but 94.7% could have been issued earlier following more stringent reading of the statute. Among retailers who were frequent violators that could have received an NTSO but did not, 73.6% were eligible for an NTSO under the more stringent reading of the statute, but only 1.9% of them had received an NTSO. "The average number of violations at frequently violating retail locations was 5.7", and 3.9% of NTSO were repeated at the same location. The authors also discuss the FDA's ability to issue civil monetary penalties (CMPs) to retailers. They state, "[i]n the law, deterrence doctrine argues that to be effective, penalties must be certain, swift and severe enough to outweigh the benefit of non-compliance. The lack of appropriate escalation and timeliness of CMPs and NTSOs undercuts these basic principles. There are no known studies that separate the impact of an NTSO or license suspension (an equivalent in jurisdictions that enforce through licensing) versus escalating fines. However, each NTSO represents a monetary value to the retailer in the amount of sales that are missed." The authors urge the FDA to take a stringent enforcement approach on retailers, and note that "[t]his distinction is important given potential unintended consequences of criminalizing youth or young adult behavior, and this paper should not be interpreted to support imposing, increasing, or more stringently enforcing penalties against youth or young adult purchasers that may exist at other levels of government."

21. Surgeon General's Advisory on E-cigarette Use Among Youth [press release]. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2018.

In December 2018, the Office of the Surgeon General issued a statement "emphasizing the importance of protecting our children from a lifetime of nicotine addiction and associated health risks by immediately addressing the epidemic of youth e-cigarette use. The recent surge in e-cigarette use among youth, which has been fueled by new types of e-cigarettes that have recently entered the market, is a cause for great concern. We must take action now to protect the health of our nation's young people." The statement included background information that e-cigarette use increased dramatically from 2017 to 2018, and that e-cigarette aerosol can negatively impact health. The Surgeon General noted that e-cigarette aerosol and flavorings can expose users and bystanders to metals, volatile organic compounds, and ultrafine particles that can be inhaled deeply into the lungs. The statement also includes information about JUUL. The sale of JUUL increased 600% from 2016 to 2017, and the Surgeon General stated that "all JUUL e-cigarettes have a high level of nicotine. A typical JUUL cartridge or 'pod' contains about as much nicotine as a pack of 20 regular cigarettes." In addition, JUUL uses nicotine salts which allow nicotine to be inhaled more easily and with less irritation than tobacco products and other e-cigarettes. The statement noted that, "any e-cigarette use among young people is unsafe, even if they do not progress to future cigarette smoking."

22. ACT Relating to protecting youth from tobacco products and vapor products by increasing the minimum legal age of sale of tobacco and vapor products, Revised Code of Washington(2019).

In 2019, Washington State legislators passed Engrossed House Bill 1074, An act relating to protecting youth from tobacco products and vapor products by increasing the minimum legal age of sale of tobacco and vapor products. The legislation prohibits selling or giving tobacco or vapor products to a person under the age of 21 and permits the Governor to seek government-to-government consultations with tribes about raising the minimum legal age of sale in cigarette tax compacts. The law is effective January 1, 2020.

23. FDA News Release -- FDA launches its first youth e-cigarette prevention TV ads, plans new educational resources as agency approaches one-year anniversary of public education campaign [press release]. Silver Spring, MD, 22 July 2019 2019.

On July 22, 2019, the U.S. Food and Drug Administration announced the launch of its first e-cigarette prevention TV ads educating kids about the dangers of e-cigarette use. Part of FDA's "The Real Cost" Youth E-Cigarette Prevention Campaign, a \$60 million effort, the new ads highlight emerging science which indicates that "teens who vape are more likely to start smoking cigarettes, putting them at risk of a lifetime of addiction to smoking and related disease." Specifically, "compared with non-users, youth who use e-cigarettes are more likely to try conventional cigarettes in the future. This was also a conclusion reached in a National Academies of Sciences, Engineering, and Medicine report in 2018 on the Public Health Consequences of E-Cigarettes." The ads will run on television networks aimed at youth (e.g., TeenNick, CW, MTV), as well as on music streaming sites, social media networks, and other teen-focused media channels. Highlighted messages include, that e-cigarettes, like cigarettes, put youth at risk for addiction and other health consequences; nicotine can rewire the brain to crave more nicotine; and that e-cigarettes can contain dangerous chemicals.

24. Outbreak of Lung Injury Associated with E-cigarette Use, or Vaping. 2020; Available at: https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html. Accessed 20 January 2020.

In 2019, CDC, U.S. Food and Drug Administration, state and local health departments, and other clinical and public health partners began investigating outbreaks of severe pulmonary disease associated with e-cigarette use--i.e., E-cigarette, or Vaping, Associated Lung Injury (EVALI). "As of January 14, 2020, a total of 2,668 hospitalized EVALI cases or deaths have been reported to CDC from all 50 states, the District of Columbia, and two U.S. territories (Puerto Rico and U.S. Virgin Islands)." Sixty deaths have been confirmed in 27 states and the District of Columbia (as of January 14, 2020); Washington State is not among the states that have reported EVALI patient death(s). "The median age of deceased patients was 51 years and ranged from 15-75 years (as of January 14, 2020)." Of the total number of EVALI cases with available data (as of January 14, 2020): 66% were male; 15% were under 18 years old; 37% were 18 to 24 years old; 24% were 25 to 34 years old; and 24% were 35 years or older. The median age of patients was 24 years (range from 12-85 years). "Data from emergency department (ED) visits suggest that the EVALI outbreak began in June 2019, and cases have been declining since a peak in September. Overall, data suggest a period of gradual increase in ED visits associated with e-cigarette use since 2017, followed by a sharp rise in June 2019. The CDC notes, "While ED visits associated with possible EVALI have declined [since a peak in September 2019], they have not returned to levels before June 2019 and EVALI remains a concern." National data show that certain groups of EVALI patients (i.e., those with cardiac disease, chronic pulmonary disease, and diabetes as well as older adults) are more likely to be rehospitalized or die. CDC reported, "2,022 hospitalized patients had data on substance use, of whom (as of January 14, 2020): 82% reported using THC-containing products; 33% reported exclusive use of THC-containing products." Meanwhile, "57% reported using nicotine-containing products; 14% reported exclusive use of nicotine containing products." Of those EVALI patients who reported using nicotine-containing products, 54% provided data on product source (as of January 7, 2020): 69% reported acquiring products only from commercial sources; 17% reported acquiring products only from informal sources; and 15% reported acquiring products from both commercial and informal sources." Among younger EVALI patients (aged 13 to 17 years), 94% of acquired THC-containing products only from informal sources (versus 62% of those aged 45 years or older) and 42% acquired nicotine-containing products only from informal sources (versus 12% of those aged 45 years or older) (as of January 7, 2020). Patient exposure data indicate: "Vitamin E acetate has been identified as a chemical of concern among people with EVALI," and "THC is present in most of the samples tested by FDA to date, and most patients report a history of using THC-containing products." As of January 7, 2020, "The latest national and state findings suggest THC-containing e-cigarette, or vaping, products, particularly from informal sources like friends, family, or in-person or online dealers, are linked to most of the cases and play a major role in the outbreak. Among other recommendations, CDC recommends that youth and young adults, women who are pregnant, and adults who do not currently use tobacco products not use e-cigarette products.

25. Tobacco 21. 2021; Available at: <https://www.fda.gov/tobacco-products/retail-sales-tobacco-products/tobacco-21>. Accessed 3/25/2021.

The Federal Food, Drug, and Cosmetic Act was modified on December 20, 2019 to raise the federal minimum age for sale of tobacco products from 18 years old to 21 years old. The change

applied to all tobacco products, including cigarettes, cigars, and e-cigarettes, and was effective immediately.

26. FDA Finalizes Enforcement Policy on Unauthorized Flavored Cartridge-Based E-Cigarettes that Appeal to Children, Including Fruit and Mint [press release]. 2020.

This press release announced FDA enforcement efforts on unauthorized flavored e-cigarettes that appeal to youth.

27. Organization World Health. Smoking and COVID-19: Scientific brief.2020.

The World Health Organization (WHO) conducted a review of literature to evaluate the association between smoking and COVID-19. They identified 34 peer-reviewed journal articles published before May 2020, including 26 observational studies, 8 meta-analyses, and qualitative primary research. Research has shown that 1.4% to 18.5% of individuals hospitalized for COVID-19 were smokers. A meta-analyses of 7 studies “found a statistically significant association between smoking and severity of COVID-19 outcomes amongst patients.” Other studies found a statistically significant association between smoking status and COVID-19 disease severity, admission to an Intensive Care Unit, ventilator use, and death. WHO concluded that, “available evidence suggests that smoking is associated with increased severity of disease and death in hospitalized COVID-19 patients.”

28. Marynak K., Mahoney, M., Williams, K. S., Tynan, M., Reimels, E., King, B. A. State and Territorial Laws Prohibiting Sales of Tobacco Products to Persons Aged <21 Years — United States, December 20, 2019. *US Department of Health and Human Services/Centers for Disease Control and Prevention.* 2020;69(7).

In 2020, the Centers for Disease Control and Prevention (CDC) published information on which states have laws prohibiting sales of tobacco to youth under 21 years old. Data was reported using the CDC State Tobacco Activities Tracking and Evaluation (STATE) System for 50 states, DC, American Samoa, Guam, Marshall Islands, the Commonwealth of the Northern Mariana Islands, Palau, Puerto Rico, and the U.S. Virgin Islands. The report includes information on which states penalize youth for purchase, use and/or possession of tobacco and found that out of all states and territories evaluated, only 6 states and Palau do not have a penalty policy. Among states who do have a penalty for purchase, use and/or possession, the penalties include community service, fine, educational or cessation programming, civil penalties, and misdemeanor. Seven states (of which Washington is not one) have exemptions from the penalties for members of the armed services.

29. FDA Launches Campaign Aimed at Preventing E-Cigarette Use Among American Indian/Alaska Native Youth [press release]. 2022.

In June 2022, the FDA launched a youth e-cigarette prevention campaign, “Next Legends” with specific messaging toward American Indian and Alaska Native youth.

30. Jindal M., Mistry K. B., Trent M., et al. Police Exposures and the Health and Well-being of Black Youth in the US: A Systematic Review. *JAMA Pediatr.* 2022;176(1):78-88.

Jindal et al. conducted a mixed methods systematic review of literature to describe the association between police exposure and health outcomes for Black youth aged 26 and younger. The authors cite prior research to explain that “Black youth in the U.S. experience contact with

the police as early as 8 years old, and by age 24 years, they have nearly 9-fold the number of encounters with police as their White counterparts. Furthermore, Black youth are more likely to experience use of force and 5-fold as likely to experience injury during these interactions.” The researchers followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guidelines. Studies between 1980-2020 were included in the review, where study participants were Black youth and the study included police exposure and examined health as the outcome. Exposure to police was the main exposure of interest, and included “police contact (presence of police in schools, personal experiences ranging from benign stops to use of force and arrest, and vicarious exposure) and perceptions of police discrimination”. Further, “policing in schools is associated with poor test scores and dropout.” The health outcomes included were physical health, mental health, risk behaviors, and safety. The researchers utilized separate methods for evaluating quantitative and qualitative studies. 16 quantitative studies and 13 qualitative studies were included in the review. The Quality Assessment Tool from the Effective Public Health Practice Project was used to assess quantitative study biases, design, confounders, data collection, and analysis. The National Institute for Health and Care Excellence methodology checklist was used to assess qualitative study approach, design, data collection, validity, analysis and ethics. After conducting a convergent segregated approach, the study health outcomes and associations were analyzed. 25 of the 29 studies in this review reported at least 1 connection between police exposure and adverse health outcomes. Settings in which police exposure for youth varied widely (grade schools, historically White colleges, neighborhoods, streets, parks, etc.). Regarding quantitative mental health outcomes, police exposure was associated with poor public regard, sadness, anger, externalizing behaviors, fear, psychological distress, and feelings of safety. Qualitative studies found themes related to police exposure and psychological distress, maladaptive coping, vicarious impact, and role confusion. Regarding quantitative risk behavior outcomes, police exposure was associated with intentions to have sex, number of anal sex partners, and number of overall sex partners. Qualitative studies found themes related to police exposure and risk taking, impairment of future orientation, and inability to engage in prosocial activities. Regarding quantitative substance use outcomes, police exposure among boys was associated with smoking. Qualitative studies also found themes related to police exposure and maltreatment and vulnerability to violence. Evidence from this review indicates that police exposures are associated with adverse health outcomes for Black youth.

31. Slocum Lee Ann, Wiley Stephanie Ann. “Experience of the Expected?” Race and Ethnicity Differences in the Effects of Police Contact on Youth*. *Criminology*. 2018;56(2):402-432.

Slocum and Wiley analyzed data collected from 6th and 7th graders through the National Evaluation of the Gang Resistance Education and Training program. Seven U.S. cities participate in the program, and data from 3,245 youth were included in this study. The dependent variables analyzed were procedural injustice, willingness to report crime, support for the personal use of violence, and delinquency. The key independent variable analyzed was police-initiated contact. The data were analyzed using maximum likelihood estimation with missing values (MLMV) via structural equation modeling (SEM). The study results show that regardless of race or ethnicity, youth who were stopped or arrested and were not satisfied with the way they were treated by police had more negative outcomes, as compared to youth who did not have police contact. The outcome data related to procedural injustice, willingness to report, and delinquency indicate that

youth were protected from the potentially negative consequences of officer interaction when they indicated satisfaction with how they were treated. “[I]n a few cases, encounters are harmful even when youth are satisfied with how they have been treated.” “[C]ompared with [w]hite youth, youth of color have higher levels of police contact and tend to be less satisfied with their treatment.” The outcome data related to the personal use of violence was universally detrimental to youth, even when the youth reported positive contact with officers. The authors suggest that this finding may be due to neighborhood factors outside of the variables included in this study. The authors also state, “When interpreting the findings regarding race/ethnicity differences, it is important to remember the role that prior perceptions of the police play in shaping how one perceives current law enforcement encounters.”

32. Fine Adam D., Donley Sachiko, Cavanagh Caitlin, et al. Youth Perceptions of Law Enforcement and Worry About Crime from 1976 to 2016. *Criminal Justice and Behavior*. 2020;47(5):564-581.

Fine et al conducted a cross-sectional study to examine youth perceptions of law enforcement over time. They state, “[d]espite current media attention, acrimonious relations between law enforcement and individuals of color are not a 21st-century phenomenon.” Data were gathered from the Monitoring the Future (MTF) study, which includes self-reported surveys of 12th grade students in the 48 contiguous U.S. states across several different cohorts. The analysis examined data from 1976-2016. Youth were asked their demographics, and about their perceptions of law enforcement and worry about crime. The trends in youth perceptions of law enforcement were analyzed by youth demographics and differences between different racial/ethnic groups. White youth perceptions of law enforcement and worry about crime were relatively consistent from the 1970’s through 1990, then perceptions declined and worry increased in the early 1990’s, then returned and remained stable during the 2000’s through 2013. White youth perceptions declined between 2013-2014, while worry increased from 2014-2015, then perceptions further declined from 2014-2015. Perceptions improved from 2015-2016, while worry plateaued. Non-white youth perceptions of law enforcement and worry about crime were relatively consistent in the 1970’s to 1980’s, but perceptions declined significantly, and worry increased in the early 1990’s. The drop in perception was about 4 times larger than for white youth perceptions. Between the late 1990’s to 2004, non-white youth perceptions increased steadily and worry about crime declined consistently. Non-white youth reported more negative perceptions of law enforcement than white youth, with the gap in perceptions widening in the 1990’s, and narrowing in the early 2000’s. The largest difference between groups occurred between 20015-2016. “White youth held the most positive views of law enforcement and were least worried about crime, followed by Hispanic youth, then Black youth.” In sum, during the 1990’s, worry about crime was high and perceptions of law enforcement were low. The authors connect these findings to high rates of crime during this time, and potentially to youth seeing law enforcement as ineffective at preventing crime. From 2013-2015, white youth worry about crime increased while actual crime rates declined. The authors discuss views of law enforcement as potentially “attributable to the historical climate and national conversations surrounding unjust policing”. Further, the connection is made between youth perceptions of law enforcement with the publicized murders of several men and boys of color. “The fact that over the past 40 years, Black and Hispanic youth perceptions of law enforcement demonstrated a larger magnitude of change from year to year as compared with White youth suggests that their perceptions may be more strongly affected by changes in policing practices. Although tentative, this may indicate that policies and protocols

that influence police–community interactions could have stronger impacts in non-White compared with White communities.”

33. **Tobacco Use: Considerations for Clinicians. 2022; Available at: <https://www.aap.org/en/patient-care/tobacco-control-and-prevention/youth-tobacco-cessation/tobacco-use-considerations-for-clinicians/>. Accessed 3/14/2023.**

This American Academy of Pediatrics website provides “Considerations for Clinicians” related to youth commercial tobacco use and cessation. AAP stated that “youth are uniquely susceptible to nicotine because their brains are still developing” and nicotine can harm parts of the brain that control attention, learning, mood, and impulse control.” The AAP acknowledged that there are structural factors to youth smoking and the “tobacco industry has a long history of targeted marketing to specific populations including (but not limited to) racial/ethnic groups, LGBTQ+ communities, and young people ([e.g.], promoting menthol cigarettes to Black communities, making tobacco seem cool or attractive to youth, and promoting products through direct marketing and social media promotion).” The “evidence base for youth tobacco cessation is limited.” However, “[a]ppropriate behavioral and pharmacologic supports may increase the odds of quitting successfully” and “cessation treatment should be tailored to a patient’s level of tobacco use, dependence, and readiness for change.” One promising practice is counseling and treatment by a pediatric healthcare provider who can help to “[t]reat youth by linking them to appropriate behavioral resources, prescribing pharmacological support when indicated and following up to provide long-term support.” Moreover, “[c]essation treatments should be provided to youth confidentially, in the context of a trusting relationship between the patient and their pediatric health clinician.” AAP also acknowledges that clinical encounters cannot provide ongoing support that youth may need to help them quit tobacco and “[t]reatment extenders, such as web-based quit supports, text-message cessation programs, and telephone quitlines have the expertise and capacity to provide youth who use tobacco with ongoing support throughout their quit attempt. Pediatric health clinicians can connect youth with these resources, follow-up about youth’s progress and provide additional support as needed.” Youth under 18 years old require a prescription from a healthcare provider to access any smoking cessation medications, including medications that are available over-the-counter.

34. **African American Tobacco Control Leadership Council the American Cancer Society, American Heart Association, American Lung Association; Asian Pacific Partners for Empowerment, Advocacy and Leadership (APPEAL), Campaign for Tobacco-Free Kids, the Intercultural Cancer Council; LGBT Healthlink at CenterLink: The Community of LGBT Centers, NAATPN, Inc.; National Latino Alliance for Health Equity, the Smoking Cessation Leadership Center; Truth Initiative, and the University of Southern California Keck School of Medicine. Achieving Health Equity in Tobacco Control.2015.**

A group of organizations endorsed a report on equity concerns related to smoking and tobacco use. The agencies included were the African American Tobacco Control Leadership Council; the American Cancer Society; American Heart Association; American Lung Association; Asian Pacific Partners for Empowerment, Advocacy and Leadership (APPEAL); Campaign for Tobacco-Free Kids; the Intercultural Cancer Council; LGBT Healthlink at CenterLink: The Community of LGBT Centers; NAATPN, Inc.; National Latino Alliance for Health Equity; the Smoking Cessation Leadership Center; Truth Initiative; and the University of Southern California Keck School of Medicine. The report includes tobacco related disparities by

socioeconomic status, education level, race/ethnicity, LGBTQ status, mental illness, and houselessness. Advocacy and informational resources are also included. The report cites research to explain that exposure to cigarette, tobacco, and vapor product advertising is higher among communities of color, LGBT+ people, urban neighborhoods and neighborhoods with lower income.

35. Grilo G., Crespi E., Cohen J. E. A scoping review on disparities in exposure to advertising for e-cigarettes and heated tobacco products and implications for advancing a health equity research agenda. *Int J Equity Health*. 2021;20(1):238.

Grilo, Crespi, and Cohen conducted a scoping review to explore disparities in exposure to and density of e-cigarette and heated tobacco advertising. Literature was gathered from 5 databases, and 15 articles were included for data extraction. The studies included were from 2014 – 2020 and examined both individual and neighborhood levels of advertising exposure. Studies examined age, education, sex, gender identity and sexual orientation, race/ethnicity, socioeconomic status, and urban/rural exposure differences. Results of the review show that youth, those with more than a high school diploma, males, sexual and gender minorities, whites, and urban residents were more likely to be exposed to e-cigarettes, while at the neighborhood level, non-white neighborhoods were more likely to be exposed. The researchers connect the higher rates of exposure to use-related disparities.

36. Centers for Disease Control and Prevention Office on Smoking and Health. Summary of Scientific Evidence: Tobacco Retail Density, Location, and Licensure 2021.

The Centers for Disease Control and Prevention compiled a summary of scientific evidence regarding tobacco retail density, location, and licensure. Findings show that living near tobacco retailers is associated with higher rates of tobacco use, lower rates of quitting tobacco products, and higher rates of youth initiation of tobacco product use. Tobacco retailers are concentrated in areas near youth, areas with high population density, and in low income neighborhoods. A study that examined tobacco retailers across 30 U.S. cities found that “on average, 63% of public schools were located within 1,000 feet of a tobacco retailer, the lowest-income neighborhoods had nearly five times more tobacco retailers than the highest-income neighborhoods, and 70% of residents across the 30 cities lived within a half mile of a tobacco retailer.” Further, national-level data show that approximately 70% of tobacco retailers are located within 1,000 feet of one another. Studies show similar density patterns of e-cigarette retailers.

37. Christenson T., Weisser, J. Health of Washington State Report: Tobacco Use. Washington State Department of Health;2015.

Combined 2012-2014 Behavioral Risk Factor Surveillance System (BRFSS) data indicate that AI/AN adults in Washington have significantly higher rates of current cigarette use than their white, black, Hispanic/Latino, and Asian counterparts. Cigarette use also decreased significantly as educational attainment or income increased. This report also indicates that smoking rates among gay, lesbian, and bisexual respondents were significantly higher than for their straight counterparts. These BRFSS data and 2014 Healthy youth survey data also show that smoking prevalence is highest in late adolescence and early adulthood, peaking among 25-34 years old for men and women. Pregnancy Risk Assessment Monitoring System (PRAMS) data from 2010-2012 indicate that the smoking rates among pregnant women before and during pregnancy are highest among mothers younger than 20 (36% [95% CI 28-45%]). Thirty-two percent of mothers

age 20-24 also reported smoking before and during pregnancy (95% CI 27-37%) compared to 9% (95% CI 6-12%) of mothers 35 years or older. These data also indicate that smoking before pregnancy is highest among AI/AN (50% [95% CI 45-55%]) and low-income mothers. Because women often are not aware that they are pregnant until several weeks into their pregnancy, the smoking rates in the months leading up to pregnancy can have an important impact on fetal development and growth.

38. Washington State Healthy Youth Survey. QxQ Analysis Tool. 2021.

The Washington State Healthy Youth Survey (HYS) is a bi-annual survey of Washington State youth to measure health risk behaviors that contribute to morbidity, mortality, and social problems. According to the 2021 Washington Healthy Youth Survey (HYS), lifetime use of both cigarettes and e-cigarettes/vapor products among 8th and 10th graders is higher among American Indian or Alaska Native and multi-racial students than their peers. Data also show higher rates of lifetime cigarette and e-cigarette/vapor product use among 8th, 10th, and 12th grade students identifying as gay and lesbian, compared to their straight counterparts. Finally, female students in grades 8, 10, and 12 reported higher rates of lifetime cigarette and e-cigarette use, compared to their male counterparts.

39. U.S. Department of Justice Office of Juvenile Justice and Delinquency Prevention. Disproportionate Minority Contact: Literature Review, A product of the Model Programs Guide.2014.

The U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention published definitions and a summary of literature related to "Disproportionate Minority Contact" in the juvenile criminal legal system. Amendments to the Juvenile Justice and Delinquency Program Act of 1974 defined "Disproportionate Minority Contact" as "the rates of contact with the juvenile justice system among juveniles of a specific minority group that are significantly different from rates of contact for white non-Hispanic juveniles." States that receive federal funding from the Office must present data by the following race/ethnicities: white (non-Hispanic), Black and African American (non-Hispanic), Hispanic or Latinx, Asian (non-Hispanic), Native Hawaiian or other Pacific Islander (non-Hispanic), American Indian/Alaska Native (non-Hispanic), and Other/Multi-racial. They define "'minority' as youth who are American Indian/Alaska Native, Asian, Black or African American, Hispanic or Latino, or Native Hawaiian or other Pacific Islander." Disproportionality must be reported for nine points of contact, including arrest, referral to court, diversion, secure detention, charges, adjudication, probation supervision, secure confinement, and transfer to adult court. They state that youth of color are more likely to have contact with the juvenile system than white, non-Hispanic youth. There are two main theories for disproportionate contact, including differential offending/involvement (e.g. differences in youth behavior, neighborhood factors) and differential treatment/selection (e.g. structure of criminal legal system decision-making). The report provides an overview of reasons for disproportionate contact and discusses differential opportunities available for prevention and treatment.

40. Project The Sentencing. Policy Brief: Disproportionate Minority Contact in the Juvenile Justice System.2018.

This policy brief discusses Disproportionate Minority Contact, which "reflects both racial biases woven into the justice system ("differential selection") and differences in the actual offending

patterns among [racial/ethnic] groups ("differential involvement")." Federally, juvenile justice system contact is defined as, "arrest, referral to court, diversion, secure detention, petition (i.e. charges filed), delinquent findings (i.e. guilt), probation, confinement in secure correctional facilities, and/or transfer to criminal/adult jurisdiction." The authors noted that disproportionate minority contact in the juvenile justice system is well-documented and the U.S. Justice Department has stated that juvenile disproportionate minority contact "is evident at nearly all contact points on the juvenile justice system continuum." Black youth are more likely to be arrested, referred to juvenile court, processed, sent to secure confinement, and transferred to adult facilities than white youth. Nationally, African American youth are twice as likely to be arrested than white youth. However, this disproportionality changes depending on the crime. For example, in 2011, Black youth were 269 percent more likely to be arrested for violating curfew laws than white youth. This disproportionality has also grown for some crimes (e.g. property crimes). In addition, "youth of color are overrepresented at many stages of the juvenile justice system as compared with their presence in the general population." For example, African-American youth comprise 14% of the general population, but account for 40% of secure placement. The authors also present data showing that most juvenile arrests are for non-violent, low-level, or non-criminal acts. Violent crimes account for only 5% of juvenile arrests. Property crimes are the most common offenses for juveniles, and account for 25% of arrests. The authors also note the intersectionality with geography. They state that, "given the realities of residential patterns by race, [differences in arrest rates by race for the same behaviors] may be reflected in higher arrest rates of minority youth than white youth for some offenses. As a result, juveniles behaving in the same way- for example, hanging out late at night- will be treated differently based on where they live, not on how they behave." This brief also outlines how policy choices can worsen disparities, including police presence in schools and the "criminalization of misbehavior," valid court orders that lead to detention, and policies impacting population density and segregated housing.

41. Robles-Ramamurthy B., Watson C. Examining Racial Disparities in Juvenile Justice. *Journal of American Academy of Psychiatry and the Law*. 2019;47(1):48-52.

Robles-Ramamurthy and Watson provided commentary on research focusing on racial inequities in the juvenile justice system. Disproportionate minority contact and racial disparities are present at every level of processing within the juvenile justice system, including at arrest, referral, diversion, detention, filings, findings, probation, confinement, and transfer to adult court. The authors summarize data from Washington State, as well as provide discussion of theories used to explain racial disparities within the criminal justice selection. The "differential offending" theory suggests that minority youth commit crimes at greater rates than white youth. However, studies have found that "this difference would not explain the full picture of minority overrepresentation throughout the justice system." The "selection" theory suggests differential contact. For example, the National Longitudinal Survey of Youth found that Black youth were more likely to be arrested and arrested multiple times compared to white youth. The authors also cite evidence from a systematic review of 72 studies that found differential treatment of minority youth in 82% of studies and at 9 different decision points in the juvenile justice system. They summarize that, "evidence of a race effect was greater at the earlier stages of the process, including arrest, referral to court, and placement in secure detention." Robles-Ramamurthy and Watson state that, "the intricacies of racial disparities in the juvenile justice system are difficult to study because of the close relationship between crime and many of the social factors affecting

communities in which minority youth are likely to be raised." Youth of color are more likely to experience higher poverty rates and lower socioeconomic status, to attend schools with zero-tolerance policies and law enforcement presence on campus, and to experience parental incarceration due to disparities in the larger criminal justice system. The authors also summarized long-term impacts of juvenile justice contact on youth, including lower high school graduation rates, higher rates of unemployment, higher rates of eviction and homelessness, and increased rates of recidivism. Overall, the authors concluded that, "addressing social factors that are at the root of disproportionate minority contact will result in significant benefit in reducing racial disparities within the juvenile justice system."

42. Juvenile Justice and Racial Disproportionality. Washington State: The Task Force on Race and the Criminal Justice System; 2012.

This report by Washington's Task Force on Race and the Criminal Justice System highlights data which indicate that youth of color in Washington are over-represented at every stage of the juvenile justice system. For example, youth of color are more likely than their white peers to be arrested, referred to court, prosecuted, adjudicated guilty, incarcerated, and transferred to the adult system. Further, data from statewide court records for 2009 show that with the exception of Asian/Pacific Islander youth, youth of color are less likely to receive a diversion, such as a Special Sex Offender Disposition Alternative (SSODA), relative to White youth.

43. Services Washington State Department of Social and Health, Justice Washington State Partnership Council on Juvenile. Washington State Partnership on Juvenile Justice 2017 Annual Report to the Governor and State Legislature. 2017.

The Washington State Partnership Council on Juvenile Justice, the Office of Juvenile Justice (Department of Children, Youth, and Families), and the Center for the Study and Advancement of Justice Effectiveness provided an annual report to the Governor and Legislature. In this 2017 Annual Report, they highlighted major accomplishments, summarized key findings of the juvenile criminal legal system, and provided recommendations. The report found that, from 2007 to 2015, juvenile arrests, referrals to court services, and detention use declined by 55% in Washington State, and the juvenile arrest rate in Washington State (23 per 1000 youth aged 12 to 17) was lower than the national average (28 per 1000 youth aged 12 to 17). However, these declines did not happen proportionally and contact for youth of color increased over the same time period, with data showing that disparities have doubled in the last six years. Black youth were 3 times as likely and American Indian/Alaskan Native youth were 4 times as likely to be referred to juvenile court as white youth. These disparities were greatest at arrest and referral. The report notes, "while disparities in [juvenile criminal legal system] contact are the highest at the point of referral, they also persist at each decision point of system involvement." For example, Black youth are 40% less likely to receive a diversion or deferred disposition as white youth; Black youth are less likely to receive an evidence-based practice program; and Black and African American youth are significantly more likely to be tried as adults compared to white youth. In addition, rates of juvenile arrest and use of diversion and detention varied widely by court jurisdiction and "the large majority of [youth involved in the criminal justice system] are managed by local courts (94%) and there are large differences in court process, diversion options, and program availability across sites." The report notes, "a fundamental attribute of the juvenile [criminal legal] system in Washington State is the division of responsibility between the county-run system of juvenile courts and the state-run system intended to serve higher risk youth

who have been found responsible for more serious offending behavior. There are 35 independent, locally funded and locally administered juvenile courts serving Washington's 39 counties." The report notes that, in 2016, there were 19,234 misdemeanor and felony referrals to juvenile courts and 12,131 juvenile court dispositions involving 10,553 youth. Of these youth, 647 (6%) were admitted to Juvenile Rehabilitation. Once youth are cited or arrested by police, they may be referred to the county prosecutor and may then be referred to diversion, be assigned to a capacity or competency hearing, have their case filed in adult court, or be dismissed. The rate of juvenile violent index offenses (i.e. murder, non-negligent homicide, rape, robbery, aggravated assault) was approximately 1.5 per 1000 in 2015. In 2016, approximately 70% of juvenile court referrals were for males and 30% for females. By race/ethnicity, 51% of juvenile court referrals were for white youth, 24.8% for Hispanic youth, 14.8% for Black youth, 4% for American Indian/Alaskan Native youth, 3.4% for Asian/Pacific Islander youth, and 1.8% for youth whose race/ethnicity is other or unknown.

44. Henning K. The Reasonable Black Child: Race, Adolescence, and the Fourth Amendment. *American University Law Review*. 2018;67(5):1513-1576.

In this law review, Henning presented arguments that the juvenile court system should modify the standard of "reasonable juvenile" that determines when law enforcement are justified to arrest youth under Fourth Amendment jurisprudence (search and seizure doctrine). The author argues that racial inequities in the criminal legal system, implicit racial bias, adolescent brain development, and current relationships between youth and law enforcement requires changes in the "reasonable juvenile" standard. They argue that there is a unique interplay between race and adolescence and that "race and age affect every critical decision in the Fourth Amendment inquiry." The article examines, "To what extent does the child's race affect the objective assessment of whether a police-youth encounter ventures from a 'contact' to a seizure? To what extent does the child's race affect the voluntariness of consent? To what extent should the child's race affect the officer's interpretation of a child's behavior in the reasonable articulate suspicion or probable cause analysis?" The article summarizes research and court case law for each of these sections.

45. Gottlieb N. H., Loukas A., Corrao M., et al. Minors' tobacco possession law violations and intentions to smoke: implications for tobacco control. *Tob Control*. 2004;13(3):237-243.

Gottlieb et al. examined data from the Texas Youth Tobacco Survey to test associations with youth decreased intentions to smoke next year. The researchers examined whether tobacco possession citations, knowing someone who was cited, and threat of drivers license suspension had an impact on intentions to smoke. The researchers also examined whether the enforcement of the policy is enforced differently across different groups of students. The Texas Youth Tobacco Survey is an 86-item anonymous survey, and participants included in this study were 28,249 students aged 11-18. The researchers conducted hierarchical linear modelling to allow for the examination of clustered data, while modeling both school and individual level data. The results show that receiving a tobacco possession citation was not related to future smoking intentions, except among youth in 4 schools who reported ever daily smoking. Knowing someone who was cited was not impact youth intentions for future smoking. The threat of license suspension was associated with a lower likelihood of future smoking. The authors found

differential enforcement based on ethnicity, where Black and Hispanic youth had a higher probability of being cited than their peers.

46. Wakefield M., Giovino, G. . Teen penalties for tobacco possession, use, and purchase: evidence and issues. *Tobacco Control*. 2003;12:6-13.

Wakefield and Giovino summarized literature on tobacco possession, use, and purchase (PUP) laws. The authors point to previously cited research to explain, “the assumed deterrent effect of punishment is to influence the future behavior of the offender being punished, or generally to influence other potential offenders directly or indirectly observing the punishment, or both.” Elements that can influence the effectiveness of a deterrent are intensity, consistency or certainty, timing, and perceived legitimacy of the punishment, the relationship between the person receiving and giving the punishment, and whether shame is placed on the person or on the behavior in question. Punishment is more likely to impact behavior when the giver and receiver of punishment have a close relationship (like parent-child, and unlike law enforcement-child). Research on parent-child connectedness and punishment show that strong connectedness, when coupled with parental discipline, can lead to decreased levels of youth smoking. Researchers point out that interactions between parents and youth, and youth experiences in the school environment can serve as effective prevention approaches. In contrast, “some parents who are unconcerned about smoking by their children become angry because they do not want to pay the fine or take time to have their child attend community service. In these situations, PUP laws may conceivably exacerbate already problematic parent–child relationships.” The authors point to one study to explain that fines imposed through PUP laws are usually paid by the parents rather than the youth. The researchers state that PUP laws may divert policy attention away from effective tobacco control strategies. Further, PUP laws may relieve the tobacco industry of responsibility for its marketing practices and reinforce the tobacco industry’s position that smoking is for adults only. The tobacco industry has been active in supporting PUP laws, and researchers state this may be associated with efforts to prevent passage of more effective tobacco control measures. The authors state that “concerted media advocacy about the law” may be needed for any behavior change to occur. One study that examined data from Utah and South Dakota pointed out that “police may find it easier to enforce laws against minors than retailers, with a disproportionate use of enforcement resources focused on youth”. A California study found similar results, where 91% of officers issued citations against youth while only 71% had issued citations against retailers. In a Minnesota study of adolescents cited for PUP, neither youth who paid a fine nor youth who attended a smoking cessation program had significant decreases in smoking rates after 3-month follow-up. These same youth also showed no significant changes in readiness to quit smoking. A separate Florida study evaluated smoking rates among youth cited for PUP. In this study, the parent/guardian was required to appear with the youth in court, both of them were required to watch a video on health effects of smoking, then the judge ordered fines, community service, or mandated a tobacco education class for the youth. Youth were required to track their program compliance. When at the initial court appearance, “16% of teens reported they had not used tobacco since being cited, 28% had used less tobacco, 52% had not changed, and 5% used more”. At 2-month follow-up, “28% claimed to have not used tobacco since being cited, 29% said they used less, 41% had not changed, and 2% used more”. The authors stated that youth may have incorrectly reported their smoking use due to fear of additional penalization. A separate study conducted in Florida compared low levels of PUP enforcement to high levels of PUP enforcement. The study found that youth in the high enforcement areas were more aware of

PUP laws, and that students who smoke and live in low enforcement areas were less likely to have bought cigarettes from stores. “After controlling for race and grade, being in a high [enforcement] county was significantly associated with a reduced likelihood of 30 day tobacco smoking.” One study that examined FDA compliance check data in 45 states and Washington D.C. found that states penalizing youth for possession had slightly, but not significantly, lower probability of retailers selling to youth, while states that penalized youth for purchase of tobacco did have significantly lower probability of retailers selling to youth. Of note, this study did evaluate retailer behavior, not the impact of PUP laws on rates of youth tobacco use, and the researchers accounted for existence of a PUP law, but did not account for enforcement of the law. Further, the PUP law data was not from the same years as the compliance check records. Further, “a methodological complication of all [the studies examining PUP laws on youth smoking rates] is that, to avoid further penalty, youths may under report smoking or intentions to smoke in future, especially where laws are more strongly enforced”. Overall, the researchers point out that PUP laws do not have the necessary features present for behavior change. The authors point out that punishment may temporarily suppress behavior, but does not achieve long-term behavior change. The authors point to prior research to explain that the deterrent effect is not likely to work with PUP laws because of the low risk of detection with possession of cigarettes, tobacco, or vape products.

47. Jason L. A., Pokorny S. B., Adams M. A randomized trial evaluating tobacco possession-use-purchase laws in the USA. *Soc Sci Med.* 2008;67(11):1700-1707.

Jason et al. conducted a randomized community control trial among 24 towns in Northern Illinois to explore the ways in which tobacco purchase, use, and possession laws may influence youth smoking behaviors. The control group involved youth tobacco access reduction while the experimental group included both youth tobacco access reduction in combination with fining youth for use or possession of tobacco. The study was conducted over 3 years with 25,404 students. The authors used a hierarchical linear modeling approach and a nested sampling design. Student attitudes and behavior toward tobacco, alcohol and other drugs, as well as rates of tobacco use were measures with a 74-item self-report survey. Students were categorized as smoker or non-smoker, and the primary outcome observed was 30-day prevalence abstinence. Female adolescents aged 15 or 16 were included to conduct the retailer compliance checks. Study baseline findings showed that higher rates of adolescent smoking were reported in towns with higher tobacco sales to adolescents. The results of this experimental study show that rates of smoking increased significantly less quickly among adolescents in the experimental group. The authors did not control for media anti-smoking activities or price of tobacco, or for disproportionate enforcement among officers. The authors point out that youth reporting of smoking may have been influenced by youth perceptions of punitive outcomes.

48. Jason L., Pokorny, S., Adams, M., Gadiraju, P., Morella, T., Schoeny, M., Dinwiddie, C. . Youth Caught in Violation of Tobacco Purchase, Use, and Possession Laws. *Behavior Modification.* 2007;31(6):713-731.

Jason et al. completed a review of literature on youth tobacco penalization and education efforts. Information on youth cessation programming is included. In a review of 68 adolescent tobacco cessation interventions, the average cessation rate among program participants was 12%, compared to 7% cessation rate in the control groups. Various randomized controlled trials on

youth cessation programming do not show whether mandatory smoking cessation programming is effective.

49. Force U. S. Preventive Services Task, Owens D. K., Davidson K. W., et al. Primary Care Interventions for Prevention and Cessation of Tobacco Use in Children and Adolescents: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2020;323(16):1590-1598.

In 2020, the US Preventive Services Task Force published a Recommendation Statement which included "a review of the evidence on the benefits and harms of primary care interventions for tobacco use prevention and cessation in children and adolescents". Their review included e-cigarettes in their analysis. The Task Force concluded that while tobacco prevention programming for children and adolescents have a moderate benefit on health outcomes, there is insufficient evidence to determine the effects of tobacco cessation programming for children and adolescents who already smoke.

50. Gallaway M.S., Henley S.J., Steele C.B., et al. Surveillance for Cancers Associated with Tobacco Use--United States, 2010-2014. *Morbidity and Mortality Weekly Report, Centers for Disease Control and Prevention*. 2018;67(12):1-42.

In this Surveillance Summary, the Centers for Disease Control and Prevention evaluates tobacco-associated cancer incidence for 12 types of cancer associated with tobacco use from 2010 to 2014. They find that tobacco use contributes "to at least 12 types of cancer, including acute myeloid leukemia (AML) and cancers of the oral cavity and pharynx; esophagus; stomach; colon and rectum; liver; pancreas; larynx; lung, bronchus, and trachea; kidney and renal pelvis; urinary bladder; and cervix." They used cancer incidence data covering approximately 99% of the U.S. population from CDC's National Program of Cancer Registries and the National Cancer Institute's Surveillance, Epidemiology, and End Results program. Approximately 3.3 million new tobacco-associated cancer cases were reported from 2010 to 2014, or approximately 667,000 cases per year. They found that incidence remains high among whites, blacks, non-Hispanics, and individuals living in rural areas.

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

The analysts writing the Surgeon General's reports on the health effects of smoking use a set of criteria to rank the strength of evidence that a causal relationship exists. For each health indicator, the analysts synthesize the evidence and then apply the criteria to the body of evidence. The report is then vetted by a series of external editors who are tasked with ensuring the accuracy of the report. This comprehensive analysis includes hundreds of references. The 2014 report concludes that since the 1964 Surgeon General's report, a very strong body of evidence has shown a causal link between cigarette smoking and diseases in nearly every organ, cancer (e.g. lung, liver and colorectal cancer), diminished health status, exacerbation of asthma, inflammation, impaired immune function, age-related macular degeneration, harms to the fetus, diabetes, erectile dysfunction, arthritis, and premature death. Research also shows that secondhand smoke causes cancers, reparatory disease, cardiovascular disease, stroke, and harms to infant and child health. This report also summarizes the evidence indicating that tobacco use

may have a different impact on adolescents than adults. The authors indicate that adolescence is a vulnerable stage of brain development, and that nicotine exposure during this age may have lasting adverse effects on brain development.

52. Dunbar M.S., Tucker J.S., Ewing B.A., et al. Ethnic Differences in Cigarette Use Trajectories and Health, Psychosocial, and Academic Outcomes. *Journal of Adolescent Health*. 2018;62:327-333.

Dunbar et al. presented previous research that, "youth who initiate smoking and continue to smoke demonstrate poorer academic and occupational outcomes, social difficulties, behavioral problems, and more physical and mental health problems in young adulthood relative to individuals who abstain entirely or desist after a period of experimentation." They also summarized previous research suggesting that youth alcohol and marijuana use may impact academic performance and physical health disproportionately for some racial/ethnic groups. In this study, they examined adolescent smoking trajectories and academic, health, and social outcomes by race/ethnicity for students at the end of high school. The authors followed students who were in sixth or seventh grade in 2008 through their completion of high school in 2016. Approximately 6500 students from 16 middle schools in Los Angeles, California completed annual surveys during physical education classes. Surveys asked about current cigarette smoking, sociodemographics and race/ethnicity, academic orientation, academic unpreparedness, physical ailments/symptoms, physical health, mental health, social functioning, and delinquency. Overall, they found that higher average cigarette use was associated with poorer academic performance, mental health, physical health, and social functioning as well as with greater academic unpreparedness, physical ailments, and delinquency. Controlling for cigarette use trajectories, "racial/ethnic minority youth showed poorer outcomes in multiple domains--notably physical health and physical impairments." The authors concluded, "after adjusting for similar use patterns over time, as well as an index of socioeconomic status (mother's education), cigarette smoking during adolescence is associated with poorer outcomes for racial/ethnic minority youth compared with white peers, and these disparities in health, academic, and other functional domains are evident as early as high school."

53. Sciences National Academy of. *Public Health Consequences of E-Cigarettes*. Washington, D.C.: The National Academies Press; 2018.

The U.S. Food and Drug Administration requested the National Academy of Sciences complete a report about the health impacts of e-cigarettes. As part of this white paper, the National Academy of Sciences evaluated existing published literature to determine whether there was conclusive, substantial, moderate, limited, insufficient, or no available evidence to determine the link between e-cigarette use and health outcomes. They stated that, "the net public health effect, harm or benefit, or e-cigarettes depends on three factors: their effect on youth initiation of combustible tobacco products, their effect on adult cessation of combustible tobacco products, and their intrinsic toxicity." E-cigarette use among youth and young adults has increased, and in 2016, e-cigarette use was higher than cigarette smoking or use of any other tobacco product. Use was also higher among boys and Hispanic and non-Hispanic whites. They reached 9 conclusions about the make-up of e-cigarettes. They found conclusive evidence that: 1) E-cigarette use increases airborne concentrations of particulate matter and nicotine in indoor environments. 2) Exposure to nicotine from e-cigarette use is variable and depends on product characteristics and operation. 3) E-cigarettes contain and emit numerous potentially toxic substances in addition to

nicotine. 4) The number, quantity, and characteristics of potentially toxic substances in e-cigarettes are highly variable and depend on product characteristics and operation. They found substantial evidence that: 5) Nicotine intake from e-cigarettes among experienced adult e-cigarette users is comparable to that from combustible tobacco cigarettes. 6) Under typical use, except for nicotine, there is lower exposure to potentially toxic substances from e-cigarettes compared to combustible tobacco cigarettes. 7) E-cigarettes contain metals. They found limited evidence that: 8) E-cigarette use increases levels of nicotine and other chemicals on indoor surfaces. 9) the number of metals in e-cigarettes could be greater than the number of metals in combustible cigarettes. The National Academy of Sciences also made 26 conclusions about the impact of e-cigarettes on health outcomes. They concluded that, "the implications for long-term effects on morbidity and mortality are not yet clear. Use of e-cigarettes instead of combustible tobacco cigarettes by those with existing respiratory disease might be less harmful." They found conclusive evidence that: 1) E-cigarette devices can explode and cause burns and injuries. 2) Intentional or accidental exposure to e-liquids can result in seizures, anoxic brain injury, vomiting, and lactic acidosis, among other effects. 3) Intentionally or unintentionally drinking or injecting e-liquids can be fatal. They found substantial evidence that: 4) Components of e-cigarettes can promote formation of reactive oxygen species/oxidative stress. 4) E-cigarette use results in symptoms of dependence on e-cigarettes. 5) E-cigarette use increases heart rate shortly after nicotine intake. 6) Chemicals in e-cigarettes are capable of causing DNA damage and mutagenesis, suggesting the possibility that long-term exposure could increase risk of cancer and adverse reproductive outcomes. Related to initiation and cessation, they found 7 conclusions. They found mixed evidence that, "while e-cigarettes might cause youth who use them to transition to use of combustible tobacco products, they might increase adult cessation of combustible tobacco products." They found substantial evidence that "e-cigarette use increases risk of ever using combustible tobacco cigarettes among youth and young adults." Overall, the National Academy of Sciences found that the evidence across a range of outcomes suggests that, "e-cigarettes pose less risk to an individual than combustible tobacco cigarettes." They also concluded that "there would be net public health harm in the short and long terms if the products do not increase combustible tobacco cessation in adults."

54. General Office of the Surgeon. 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 of Smoking and Health;2016.

This report was prepared by the Centers for Disease Control and Prevention's National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. It focused on examining the research around the epidemiology and health effects of e-cigarette use among youth and young adults in the United States. They note that, "the initial drafts of the chapters were written by 27 experts who were selected for their knowledge of the topics addressed. These contributions are summarized in five chapters that were evaluated by approximately 30 peer reviewers. After peer review, the entire manuscript was sent to more than 20 scientists and other experts, who examined it for its scientific integrity." The chapters outline the following topic areas: (1) historical background, (2) patterns of e-cigarette use among U.S. youth and young adults, (3) health effects of e-cigarette use among U.S. youth and young adults, (4) activities of e-cigarette companies, and (5) e-cigarette policy and practice implications.

55. FDA Statement--Statement from FDA Commissioner Scott Gottlieb, M.D., on proposed new steps to protect youth by preventing access to flavored tobacco products and banning menthol in cigarettes [press release]. 2018.

FDA Commissioner Scott Gottlieb outlines a "policy framework [that] reflects a re-doubling of the FDA's efforts to protect kids from all nicotine-containing products." He states that, "if we're to break the cycle of addiction to nicotine, preventing youth initiation on nicotine is a paramount imperative." He cites research showing that 90% of current adult smokers started smoking before 18 years of age, 95% started smoking before 21 years of age, and only 1% started smoking after 26 years of age. Research with the Centers for Disease Control and Prevention found that e-cigarette use among high school students increased 78% from 2017 to 2018, and 48% among middle school students- reversing prior trends from 2015 to 2017 suggesting that use was declining. To address these trends, FDA has taken a number of recent actions as part of their Youth Tobacco Prevention Plan, including increasing enforcement against retailers, targeting e-liquid manufacturers marketing to youth, working with eBay to remove products from their website, and launching "The Real Cost" Youth E-Cigarette Prevention Campaign. Dr. Gottlieb stated, "I repeatedly said that, although we continue to believe that non-combustible tobacco products may provide an important opportunity to migrate adult smokers away from more harmful forms of nicotine delivery, these opportunities couldn't come at the expense of addicting a generation of kids to nicotine." This statement includes two directives from the FDA. First, FDA requires that all "flavored [electronic nicotine delivery systems] products (other than tobacco, mint, and menthol flavors or non-flavored products) must be sold in age-restricted, in-person locations and, if sold online, under heightened practices for age verification." Second, FDA issued a "Notice of Proposed Rulemaking that would seek to ban menthol in combustible tobacco products, including cigarettes and cigars." Data indicate that youth are more likely to use menthol cigarettes than any other group and that, "more than half (54 percent) of youth smokers ages 12-17 use menthol cigarettes, compared to less than one-third of smokers ages 35 and older." In addition, approximately 70% of African American youth use menthol cigarettes. In response, FDA is proposing a policy to ban flavors in cigars. Dr. Gottlieb emphasized that, "If youth trends don't move in the right direction, we will revisit all of these issues."

56. FDA News Release -- FDA takes new steps to address epidemic of youth e-cigarette use, including a historic action against more than 1,300 retailers and 5 major manufacturers for their roles perpetuating youth access [press release]. 2018.

In September 2018, the U.S. Food and Drug Administration issued 1300 warning letters and fines to retailers who illegally sold JUUL and other e-cigarette products to minors. The FDA news release stated that this was the "largest coordinated enforcement effort in the FDA's history." FDA Commissioner Scott Gottlieb stated, "we see clear signs that youth use of electronic cigarettes has reached an epidemic proportion, and we must adjust certain aspects of our comprehensive strategy to stem this clear and present danger. This starts with the actions we're taking today to crack down on retail sales of e-cigarettes to minors." The FDA also issued letters to the top five-selling e-cigarette brands (which comprise 97% of the U.S. e-cigarette market) , including JUUL, Vuse, MarkTen XL, blu e-cigs, and Logic requiring each company "to submit to FDA within 60 days plans describing how they will address the widespread youth access and use of their product." The FDA also committed to increasing enforcement efforts for e-cigarette manufacturers and retailers.

57. Pisinger Charlotta, Dossing Martin. A systematic review of health effects of electronic cigarettes. *Preventive Medicine*. 2014;69:248.

Pisinger and Døssing conducted a systematic review of the literature on the health consequences of vaping products published before August 14, 2014. The authors identified 76 studies which met their inclusion criteria. They found that 34% of the studies' authors had a conflict of interest (e.g. the study was funded or somehow influenced by electronic cigarette manufacturers or consultants for manufacturers of medicinal smoking cessation therapy). Many studies found that product labels did not show the concentrations of solvents and flavoring and that products labeled nicotine free were sometimes found to actually contain nicotine in high concentrations. There was also variability in product concentrations from cartridge-to-cartridge. The authors conclude that the studies had many methodological problems and that the body of evidence is inconsistent, lack long-term follow up, and don't allow any firm conclusion on the safety of vaping products. They conclude that these 76 studies indicate that electronic cigarettes cannot be regarded as safe. The available evidence does indicate that at least some vaping products are toxic to human cells and contain toxic compounds such as metals, traces of carcinogenic nitrosamines, formaldehyde, mercury, and other potentially harmful components. Vaping was associated with significant airway and lung obstruction in the short term and other adverse effects in the mouth/throat. Some studies indicate that vaping may have less adverse effects or result in less exposure to harmful substances than combustible cigarettes. Some studies suggest that electronic cigarettes may be useful as a smoking reduction/cessation aid, but the evidence on their efficacy is conflicting.

58. Hocharoen Chanalee. An evaluation of potential harm of electronic cigarette aerosol exposures and directions for research and regulation. In: Taft D, ed: ProQuest Dissertations Publishing; 2015.

Hocharoen conducted a systematic review of the literature on electronic cigarettes published between January 1, 2009 and January 31, 2015. Thirty-nine articles met the inclusion criteria. Three of these studies examined inflammatory markers, cytokines, and chemokines, all of which found that interleukins (cellular messengers for immune response) increased with electronic cigarette exposure. One study found that interleukin 6 decreased with e-cigarette exposure. Seven studies examined cytotoxicity (cell toxicity) or mutagenicity (ability to cause genetic mutations). These studies looked at the impacts of e-vapors of liquids on lung, throat, and mouth specific embryonic stem cells, and various fibroblasts. Six of these seven studies found cytotoxic effects, decreased cell viability, changes in cell morphology, reduced ATP detection, and cell mutagenicity for at least one of the measured flavors or e-liquid components. The seventh study found no cytotoxicity from e-liquids for epithelial carcinoma cells or Chinese Hamster ovary cells. The author concludes that cell viability is affected by e-cigarettes and that vapor products sometimes contain "carcinogens, metals, and other potentially harmful constituents." The author notes that while physiological effects of e-cigarettes have been found in the literature, potential adverse long-term effects have not been studied.

59. Center Washington Poison. 2017 Annual Toxic Trend Report: Nicotine and E-Cigarette. 2017.

This brief report from the Washington Poison Center provides summary data from calls about nicotine exposure among children 0 to 12 years of age. From 2011 to 2017, the Washington Poison Center received 2,966 total cases related to nicotine exposure. The most cases occurred in

2015, with 521 total cases of nicotine exposure. In 2017, the Center had 440 cases of nicotine exposure and 373 (84.8%) cases were among children 0-5 years of age. About half of nicotine exposures come from cigarette/cigar exposure, 22% are related to e-cigarettes, and 22% are related to chewing tobacco. Children are primarily exposed through ingestion (94.5% of cases are due to ingestion), and common symptoms of nicotine exposure include vomiting, coughing/choking, drowsiness/lethargy, and pallor. Washington Poison Center noted that exposure reporting is voluntary, and that these numbers likely underrepresent nicotine exposure.

60. Rubinstein M.L., Delucchi K., Benowitz N.L., et al. Adolescent Exposure to Toxic Volatile Organic Chemicals from E-Cigarettes. *Pediatrics*. 2018;141(4).

Rubinstein et al. analyzed urine and saliva samples from adolescents aged 13-18 years old who use electronic cigarettes to evaluate the presence of volatile organic compounds. More adolescents use e-cigarettes than cigarettes, and chemicals found in e-cigarettes are known to be harmful to human health. However, the authors noted that, "there are no data on toxicant exposure in adolescent e-cigarette users. However, there is great concern because exposure to toxicants during adolescence may result in greater harm than exposure in adulthood, given vulnerability to the acute and chronic effects of toxicants in general and from their cumulative exposure if started early." This study included adolescents participating in a larger longitudinal study of the effects of e-cigarettes on adolescents in the San Francisco Bay Area. Adolescents who used e-cigarettes were scheduled for a baseline appointment within 24 hours of use and provided saliva and urine samples for analysis. Saliva samples were analyzed for cotinine, a metabolite of nicotine. Urine samples were analyzed for NNAL (a potent carcinogen) and eight volatile organic compounds that are toxic environmental or tobacco smoke constituents. They used use categories based on self-report as well as chemical levels so that, "conservative criteria for group definitions meant that the e-cigarette-only group was clearly differentiated from the dual user group, and any [volatile organic compounds] found in the e-cigarette-only group could be clearly attributed to e-cigarette use." Based on their criteria, samples were analyzed for 67 e-cigarette-only users, 16 dual users, and 20 controls. They found that the presence of 5 volatile organic compounds was significantly higher in e-cigarette-only users compared with controls ($p < .05$ for all compounds), but lower than in dual-users. For e-cigarette-only users, levels were statistically significantly higher for users that used e-cigarettes with nicotine all or some of the time and for users that reported more sessions of e-cigarette use per day. They also found that "levels of 3 other significant and likely toxic [volatile organic compounds] were just as high in users of nonnicotine products as in those using nicotine." The authors concluded, "Adolescent e-cigarette-only users had levels of 5 [volatile organic compound] toxicants detected in their urine in quantities up to 3 times greater than in matched controls...levels of toxicant exposure in dual users were up to 3 times higher than in those who used only e-cigarettes." Many of these compounds are known carcinogens.

61. Alzahrani T., Pena I., Temesgen N., et al. Association Between Electronic Cigarette Use and Myocardial Infarction. *American Journal of Preventive Medicine*. 2018;55(4):455-461.

Alzahrani et al. evaluated 2014 and 2016 National Health Interview Survey data to determine whether electronic cigarette use could increase the risk of myocardial infarction. This was the first study to examine the relationship between e-cigarette use and heart attack. E-cigarette use has been shown to stimulate similar reactions as traditional cigarette use in otherwise healthy

individuals, including endothelial dysfunction, oxidative stress, inflammation, platelet activation, and activation of the sympathetic nervous system. Interviewees were classified as never, former, and current e-cigarette and cigarette users. However, the definition of former use was not consistent between e-cigarette users and cigarette users. Based on NHIS responses, 25.8% of current e-cigarette users were former smokers and 66.2% of current e-cigarette users were also current cigarette smokers. Overall, the authors found that daily e-cigarette use was independently associated with increased odds of myocardial infarction (OR= 1.79, 95% CI= 1.20, 2.66, p-value= 0.004). Former and some day e-cigarette use were not associated with increased risk of heart attack. Former, some day, and current cigarette use were all associated with increased risk of heart attack. The authors also found that, "dual use of e-cigarettes and conventional cigarettes appears to be more dangerous than using either product alone." The authors state that their study likely underestimates the increased risk of heart attack from using e-cigarettes, and that more research is needed to fully understand the health impacts of former or some day e-cigarette use. They state that, "it is not known when the [myocardial infarctions] occurred relative to e-cigarette use, and it is likely that some of the heart attacks subjects reported occurred before e-cigarettes became available in the U.S. (around 2009). This situation will bias the [odds ratio] estimates toward the null, meaning that the study results likely underestimate the true risks associated with e-cigarette use."

62. Clapp P., Lavrich K., Reidel B., et al. The E-Cigarette Flavoring Cinnamaldehyde Suppresses Mitochondrial Function and Transiently Impairs Cilia Beat Frequency in Human Bronchial Epithelial Cells. Paper presented at: Epithelial Function in Health and Disease- Poster Discussion Session; May 23, 2018, 2018; San Diego, California.

In this abstract, Clapp et al. explain that compounds in cigarettes impair mitochondrial function and reduce cilia beat frequency, impairing lung function. They note that cinnamaldehyde, which is commonly used to flavor e-cigarette products, has similar structural properties to compounds in cigarettes. They determined the content of cinnamaldehyde in e-cigarette products and exposed human bronchial epithelial cells to various levels to evaluate a dose-response relationship. Overall, the authors concluded, "data suggest that cinnamaldehyde, a ubiquitous flavoring agent commonly used in e-cigarettes, adducts to mitochondrial proteins, disrupts mitochondrial function, and significantly reduces intracellular ATP levels, which correlates with impaired [cilia beat frequency] in airway epithelial cells...inhalational exposures of cinnamaldehyde may increase the risk of respiratory infections in e-cigarette users."

63. Gmel Gerhard, Baggio Stéphanie, Mohler-Kuo Meichun, et al. E- cigarette use in young Swiss men: is vaping an effective way of reducing or quitting smoking? *Swiss medical weekly*. 2016;146:w14271.

Gmel et al. summarize the current evidence on the impact of e-cigarettes on combustible cigarette usage, noting that the literature is conflicting—with some studies finding that vaping is associated with using fewer cigarettes but with being less likely to completely quit smoking combustible cigarettes, and other studies finding an increase in combustible cigarette usage and decreased likelihood of quitting, and still other studies finding that e-cigarettes were associated with more quit attempts and continued abstinence than NRT or using no aid. The authors used data from the Cohort Study on Substance Use Risk Factors in Switzerland. While 7,556 participants (all young men) provided consent to participate, 79.2% (n=5,987) completed the baseline questionnaire and 79.7% (n=6,020) completed the follow-up questionnaire. A total of

91.5% of the baseline respondents (n=5.476) also completed the follow-up questionnaire. Among those who did not smoke at baseline, those who were vaping at follow-up were more likely to start smoking and to become occasional or daily smokers at follow-up than were non-vapers. Among those who were occasional smokers at baseline, non-vapers were more likely to become non-smokers and less likely to become daily smokers than vapers. Among those who did not smoke at baseline, vapers were 6 times more likely to be occasion smokers and 12 times more likely to be daily smokers at follow-up than non-vapers. Among non-smokers at baseline, vapors smoked significantly more (10 times more) cigarettes weekly at follow-up than non-vapers. Weekly cigarette use increased between baseline and follow-up for occasional smokers and decreased for daily smokers but these changes were not significantly between vapers and non-vapers.

64. Grace Randolph C., Kivell Bronwyn M., Laugesen Murray. Estimating cross- price elasticity of e- cigarettes using a simulated demand procedure. *Nicotine & tobacco research : official journal of the Society for Research on Nicotine and Tobacco*. 2015;17(5):592.

Grace et al. collected data from a convenience sample of 210 daily smokers in New Zealand who were 18 years of age or older and who had no intention to quit smoking before January 1, 2013. They excluded any smokers who had ever used e-cigarettes. They interviewed participants between February and March of 2013 (response rate not noted). The researchers had participants complete a written survey and three additional validated surveys, complete the Cigarette Purchase Task (CPT), sample an e-cigarette, and then answer questions about their intentions to purchase e-cigarettes and their regular tobacco product. The CPT is used to measure demand for tobacco products across a range of prices. The authors used the CPT completed before sampling the e-cigarette as a baseline to determine the demand for combustible cigarettes in the absence of e-cigarettes. The participants also indicated their intentions to purchase e-cigarettes and combustible cigarettes after trying the e-cigarette. The authors found that the simulated demand for e-cigarettes increased as the price of regular cigarettes increased, with an average cross-price elasticity of 0.16 (indicating that a 10% increase in the cost of combustible cigarettes was associated with a 1.6% increase in the demand for e-cigarettes). However, the simulation also found that the low-cost availability of e-cigarettes did not decrease the demand for regular cigarettes at a higher price and that a significantly lower proportion of participants said that they would quit smoking tobacco completely if e-cigarettes were available than if they were not. This finding suggests that the availability of low-priced e-cigarettes could actually encourage people who would otherwise have quit smoking completely as a result of raising tobacco prices to instead continue to use combustible cigarettes perhaps in tandem with lower-cost e-cigarettes. So, while the study found that smokers may substitute e-cigarettes for combustible cigarettes as the cost of the later increases (with the cost of the former staying low), low-cost e-cigarette availability may actually discourage combustible cigarette smokers from quitting entirely as combustible cigarette prices increase.

65. Rahman M. A., Hann N., Wilson A., et al. E- Cigarettes and Smoking Cessation: Evidence from a Systematic Review and Meta- Analysis. *PLoS One*. Vol 102015.

Rahman et al. conducted a systematic review of the literature on combustible cigarette consumption or cessation after the use of e-cigarettes. Six studies met their inclusion criteria. They found that e-cigarettes with nicotine were more effective as a cessation tool than those without nicotine. The authors pooled data from two randomized control trials and found a risk

ratio of 2.29 (95% CI 1.05-4.97). They also found that use of e-cigarettes was associated with smoking cessation and reduction in the number of cigarettes used—though three of the six studies did not include a control group. The authors note that they were only able to consider the efficacy of nicotine vs. non-nicotine e-cigarettes and were not able to compare the efficacy of e-cigarettes to other cessation interventions.

66. Kalkhoran Sara, Glantz Stanton A. E-cigarettes and smoking cessation in real-world and clinical settings: a systematic review and meta-analysis. *The Lancet Respiratory Medicine*. 2016;4(2):116-128.

Kalkhoran et al. conducted a systematic review and meta-analysis to evaluate the association between e-cigarette use and combustible cigarette cessation among adults. Thirty-eight studies met their inclusion criteria for the systematic review, 20 of which had control groups and were included in the meta-analysis. They found that the odds of combustible cigarette cessation among those who used e-cigarettes was 28% lower than for those who did not use e-cigarettes (OR 0.72 [95% CI 0.57-0.91]). When the authors only included studies of smokers with an interest in quitting, they did not find a significant difference from the overall findings. The authors conclude that e-cigarettes, as they are currently being used, are associated with lower quit rates among combustible cigarette smokers.

67. Watkins S. L., Glantz S. A., Chaffee B. W. Association of Noncigarette Tobacco Product Use With Future Cigarette Smoking Among Youth in the Population Assessment of Tobacco and Health (PATH) Study, 2013-2015. *JAMA Pediatrics*. 2018;172(2):181-187.

Watkins et al. used data from the national Population Assessment of Tobacco and Health (PATH) survey to determine whether adolescents use of electronic cigarettes, hookah, noncigarette combustible tobacco, or smokeless tobacco led to cigarette smoking initiation. The authors stated that, "in addition to their direct health effects, how these products affect youth cigarette smoking is a major consideration in determining their net influence on public health." PATH is a nationally representative survey of 12 to 17 year olds, and the authors completed a longitudinal evaluation of survey responses for 10,384 youth from 2013 and 2015. At baseline, approximately 9% of youth had never tried a cigarette and had tried at least one non-cigarette tobacco product. They found that cigarette imitation was higher among youth that had used e-cigarettes, hookah, noncigarette combustible tobacco, or smokeless tobacco. Overall, "the odds of past 30-day cigarette use at follow-up were approximately twice as high among baseline ever users of e-cigarettes (odds ratio [OR], 1.87; 95% CI, 1.15-3.05), hookah (OR, 1.92; 95% CI, 1.17-3.17), noncigarette combustible tobacco (OR, 1.78, 95% CI, 1.00-3.19), and smokeless tobacco (OR< 2.07; 95% CI, 1.10-3.87)." The authors found that "ever use of e-cigarettes was associated with 2.53 times greater odds of subsequent cigarette use." Using two or more types of non-cigarette tobacco products was associated with 4 times greater odds of past 30-day cigarette smoking at follow-up (OR, 3.95, 95% CI, 2.65-5.90, P<.001). The authors cite previous research showing that "approximately 90% of adult smokers first tried a cigarette by 18 years of age, and even infrequent smoking in adolescence is associated with established adult smoking."

68. Soneji S., Barrington-Trimis J.L., Wills T.A., et al. Association Between Initial Use of e-Cigarettes and Subsequent Cigarette Smoking Among Adolescents and Young Adults--A Systematic Review and Meta-analysis. *JAMA Pediatrics*. 2017;171(8):788-797.

Soneji et al. conducted a systematic review and meta-analysis of longitudinal studies to determine whether initial use of e-cigarettes leads to subsequent cigarette smoking among youth and young adults. They included 9 studies in their analysis. Overall, they found that e-cigarette use was strongly and consistently associated with greater risk for cigarette smoking initiation (OR 3.50, 95% CI 2.38-5.16) and past 30-day cigarette smoking (OR 4.28, 95% CI 2.52-7.27) among youth and young adults. In addition, their analysis found that e-cigarette use is an independent risk factor for cigarette smoking, after controlling for multiple additional risk factors.

69. Leventhal Adam M., Strong David R., Kirkpatrick Matthew G., et al. Association of electronic cigarette use with initiation of combustible tobacco product smoking in early adolescence.(Report). 2015;314(7):700.

Leventhal et al. cite evidence that electronic cigarettes are being used among teens who have never used combustible cigarettes. They cite a 2014 estimate that in the United States 43% of 10th graders who reported using e-cigarettes in the previous 30 days reported never having tried combustible cigarettes. Leventhal et al. analyze data from a longitudinal survey of high school students from a convenience sample of 10 public high schools in the Los Angeles, California area. They collected data in three waves: baseline (fall 2013; 9th grade), 6-month follow-up (spring 2014), and 12-month follow-up (fall 2014; 10th grade). The final sample included students who completed all three waves of the survey (n=2,530). They found that students who reported e-cigarette use at baseline were also more likely to report use of combustible tobacco products in the previous 6 months. After adjusting for potential confounding factors, the authors found that baseline e-cigarette use was also associated with a higher likelihood of using combustible tobacco products (cigarettes, cigars, or hookah) at follow-up (averaged across the two follow-up periods OR 2.73 [95% CI 2.00-3.73]). This trend was also true for combustible cigarettes specifically (OR 3.25 [95% CI 2.29-4.62]).

70. Thomas A Wills, Rebecca Knight, James D Sargent, et al. Longitudinal study of e-cigarette use and onset of cigarette smoking among high school students in Hawaii. *Tobacco Control*. 2016.

Wills et al. analyzed 2013 and 2014 longitudinal school-based survey data from Hawaii. The baseline sample included 2,338 9th and 10th graders. Students who were not smokers at baseline but who had used e-cigarettes were significantly more likely to have smoked combustible cigarettes at the one-year follow-up than their non-smoking peers who had never tried e-cigarettes (OR 2.87 [95% CI 2.03-4.05]). Among students who had tried combustible cigarettes at baseline, using e-cigarettes was not significantly related to changes in their frequency of smoking traditional cigarettes at follow-up.

71. Protano C., Avino P., Manigrasso M., et al. Environmental Electronic Vape Exposure from Four Different Generations of Electronic Cigarettes: Airborne Particulate Matter Levels. *International Journal of Environmental Research and Public Health*. 2018;15(2172).

Protano et al. evaluated the levels of airborne particulate matter emitted by four generations of e-cigarette models in use in Italy. They found that all e-cigarette devices emitted particulate matter of a size that can be inhaled into the lungs (including PM10, PM4, PM2.5, and PM1). Newer models emitted greater levels of small particulate matter as a result of increased operating power.

Overall, their findings suggest that passive vaping does occur, supporting "the need for legislative interventions to regulate e-cigs use in public places and other enclosed environments, in order to protect the health of any subject who is potentially exposed."

72. Behar R. Z., Wang Y., Talbot P. Comparing the cytotoxicity of electronic cigarette fluids, aerosols and solvents. *Tob Control*. 2017;27(3):325-333.

Behar et al. evaluated the cytotoxicity of e-cigarette refill fluids and corresponding aerosol as well as propylene glycol and glycerin (common solvents) using three different types of human cells. Overall, they found that various brands and flavors of e-cigarette fluids are cytotoxic. The authors conducted a previous study evaluating the cytotoxicity of chemicals used to flavor e-cigarette refill fluids. That study found that, "cinnamon-flavoured products were particularly cytotoxic, and cinnamaldehyde was identified as the most potent additive in these fluids. We also reported that cinnamaldehyde is widely used in refill fluids, including popular fruity and sweet flavours, and that it produces adverse effects on cells at doses that do not cause cell death." Other studies have also shown that cherry-flavored products (benzaldehyde) and chocolate-flavored products (2,5-dimethylpyrazine) are potentially harmful. They also cite other research showing that e-cigarette use has numerous health effects, including respiratory, cardiac, and digestive system effects, unintentional and intentional poisonings, and injuries due to explosion. They also stated that in vitro studies have found that e-cigarettes can cause cell inflammation, apoptosis, and DNA damage. In this study, the authors evaluated 36 e-cigarette refill fluids representing a range of brands and flavors. Fluids testing included tobacco-flavored, propylene glycol, vegetable glycerin, and pure nicotine liquid. In addition, the authors produced corresponding aerosols using a smoking machine. The fluids and aerosols were tested using three types of cells. Human pulmonary fibroblasts are a cell type that is first exposed to inhaled aerosol and are involved in the development of lung diseases. Lung epithelial cells are cells commonly used in toxicological inhalation testing. Pluripotent human embryonic stem cells were also used to approximate potential impacts to human embryos. All of the tests included dose-response experiments. The authors found that 34 of the 35 products were significantly more toxic at high concentrations than at low concentrations. Creamy/buttery, mint/menthol, tobacco, and fruit flavoring categories were the most potent. The six most potent flavorings were in the creamy/buttery category and included flavorings like Swiss Dark, Butterfinger, Caramel, and Butterscotch. In general, the embryonic stem cells were more sensitive to e-cigarette fluids and aerosols than adult lung cells. Overall, 54% (19 products) were cytotoxic in both the fluid and aerosol form; 23% (8 products) were cytotoxic in the aerosol form but not the fluid form; and 3% (1 product) were cytotoxic in the fluid form but not the aerosol form. Twenty percent (7 products) were found to be non-cytotoxic in both the fluid and aerosol form. In addition, refills containing glycerin were the most cytotoxic, and 91% of glycerin-based refill fluids were cytotoxic when aerosolized. Vegetable glycerin alone was also cytotoxic when aerosolized, and was found to be more cytotoxic than propylene glycol alone. The authors noted that many flavoring liquids may be approved for ingestion, but have not been tested for safety of inhalation.

73. Erythropel H.C., Davis L.M., de Winter T.M., et al. Flavorant-Solvent Reaction Products and Menthol in JUUL E-Cigarettes and Aerosol. *American Journal of Preventive Medicine*. 2019;57(3):425-427.

Erythropel et al. examined the composition of JUUL aerosol. They evaluated 8 flavors of JUUL brand e-cigarettes to evaluate the reaction between vanillin flavoring and propylene glycol,

glycerol, menthol, and nicotine benzoate to understand how common JUUL components may interact. JUUL products contain higher concentrations of nicotine than other e-cigarette brands (5% versus 0.3%-2.4%) because they use nicotine benzoate salt that “is perceived as more satisfactory and less harsh” than other products. The authors analyzed e-liquids and used a vaping machine to capture aerosol for analysis. They found that JUUL aerosols include quantities of nicotine similar to cigarettes and levels of acetals known to cause irritation and contribute to inflammation. They explained that, “the average vanillin puff concentration was 101 mg/m³. In comparison, chronic inhalational exposure to vanillin in occupational environments is limited to 10 mg/m³, raising the question of what long-term effects regular inhalation of vanillin at such doses and frequency (200 puffs/pod) might have.” They also found levels of menthol in JUUL products (some of which are not labeled as containing menthol) at levels known to increase nicotine intake.

74. E-cigarettes linked to heart attacks, coronary artery disease and depression [press release]. 2019.

This American College of Cardiology press release summarizes results from a study by Vindhyal et al. presented at the ACC’s 68th Annual Scientific Session (2019). Vindhyal et al. reported that there are over 460 brands and 7,700 flavors of e-cigarettes. Vindhyal et al. analyzed data from 96,467 respondents to the National Health Interview Survey from 2014, 2016, and 2017. They found that adults who use vapor products are significantly more likely to have a heart attack, coronary artery disease, and depression compared to those that do not use vape products. For example, after controlling for age, sex, body mass index, high cholesterol, high blood pressure, and smoking combustible cigarettes, adults that used e-cigarettes were 34% more likely to have a heart attack and 25% more likely to have coronary artery disease compared to adults that do not use e-cigarettes. Users were at increased risk of heart attack and coronary artery disease regardless of whether they vaped daily or occasionally. The authors noted that further longitudinal data is needed to establish causation. However, the authors stated that the results “show a clear association between any kind of smoking and negative health outcomes.”

75. Bayly J.E., Bernat D., Porter L., et al. Secondhand Exposure to Aerosols from Electronic Nicotine Delivery Systems and Asthma Exacerbations Among Youth With Asthma. *CHEST*. 2018;Ahead of print.

Bayly et al. analyzed data from the 2016 Florida Youth Tobacco Survey to determine whether there was a relationship between secondhand exposure to aerosol from electronic nicotine delivery systems (ENDS) and asthma exacerbation among youth with asthma. They examined survey responses for youth aged 11 to 17 years old from middle and high schools in Florida. Overall, approximately one-third of youth reported secondhand exposure to ENDS aerosols. The authors found that secondhand exposure to aerosol from ENDS was significantly associated with higher odds of asthma attacks among youth with asthma (p <0.01; OR 1.27, 95% CI 1.11-1.47). The authors concluded that, "secondhand exposure to ENDS aerosols may be related to asthma symptoms in youth...future research is necessary to evaluate the longitudinal relationship between secondhand ENDS aerosol exposure and asthma control."

76. Barrington-Trimis Jessica L. , Kong Grace , Leventhal Adam M. , et al. E-cigarette Use and Subsequent Smoking Frequency Among Adolescents. *Pediatrics*. 2018;142(6).

E-cigarette use is associated with cigarette initiation. Barrington-Trimis et al. pooled data from 3 prospective cohort studies in California and Connecticut (baseline: 2013-2014; follow-up: 2014-2016; N = 6,258) to assess whether e-cigarette use is associated with more frequent cigarette use after initiation or whether adolescent cigarette or dual product users transition to e-cigarette use or nonuse. Authors found that fewer never e-cigarette users (at baseline) began smoking (7%) compared to those who had used e-cigarettes at baseline (21% reported smoking cigarettes at follow-up). "Baseline exclusive e-cigarette users had higher odds of reporting exclusive e-cigarette use at follow-up (OR = 7.28; 95% CI: 4.86–10.9), exclusive cigarette use at follow-up (OR = 3.84; 95% CI: 1.80– 8.19), or dual product use at follow-up (OR = 8.86; 95% CI: 5.08– 15.4)." Once youth began smoking cigarettes (either never e-cigarette users or e-cigarette users at baseline) the amount that they smoked was similar. Researchers found, "Among baseline never smokers, e-cigarette users had greater odds of subsequent experimental (odds ratio [OR] = 4.58; 95% confidence interval [CI]: 3.56–5.88), infrequent (OR = 4.27; 95% CI: 2.75–6.62) or frequent (OR = 3.51; 95% CI: 1.97–6.24) cigarette use; the 3 OR estimates were not significantly different." Whereas, "[b]aseline past-30-day exclusive cigarette use was associated with higher odds at follow-up of exclusive cigarette or dual product use than of exclusive e-cigarette use."

77. Bhatnagar A., Whitsel L. P., Blaha M. J., et al. New and Emerging Tobacco Products and the Nicotine Endgame: The Role of Robust Regulation and Comprehensive Tobacco Control and Prevention: A Presidential Advisory From the American Heart Association. *Circulation*. 2019;139(19):e937-e958.

In its Presidential Advisory on New and Emerging Tobacco Products, the American Heart Association (AHA) highlighted the dramatic increase in use of electronic cigarettes (e-cigarettes), particularly among adolescents and young adults, as a significant health concern. AHA stated, "[a]lthough these products may benefit by helping some smokers to quit or to move to a less harmful product, the long-term health effects of these products and the net public health effect associated with their use remain unclear and widely debated." Evidence indicates that use of e-cigarettes by youth "seems to be nearly exclusively for recreational purposes because youth use does not seem to be associated with quit attempts or quit contemplation." The National Academies of Sciences, Engineering, and Medical summary of the latest research on e-cigarettes indicates that these products "contain fewer numbers and lower levels of toxicants than combustible tobacco cigarettes and that exposure to nicotine and toxicants from aerosolization of e-cigarette constituents depended on the characteristics of the device and its use." Upon review of the evidence, the committee found that "e-cigarettes likely pose less risk than continuing to smoke cigarettes", but that e-cigarettes are "not without adverse biological effects in humans." Population dynamic modeling conducted before the rise in JUUL use indicated that, "assuming that the use of e-cigarettes increases the net cessation rate of combustible cigarettes among adults, the use of these products could generate a net public health benefit, despite the increased use of combustible tobacco products by young adults." However, the modeling also showed that "in some scenarios in which e-cigarette toxicity was much higher or the gateway effects from e-cigarette use to combustible cigarette use were much stronger, the public health benefit was substantially less or e-cigarette use was even associated with net harm. Moreover, if e-cigarettes do not promote cessation of combustible tobacco products in adults, the policy model projected that there would be net public harm in both the short and long terms." The committee therefore "prioritized research to determine whether e-cigarettes promote smoking cessation." AHA noted that data documenting the increasing use of e-cigarettes among adolescents and young adults

may underestimate the true prevalence because evidence indicates that “some youth self-report that they are not using e-cigarettes when they are using electronic hookah, JUUL, and other similar products.” A growing body of evidence shows that young people who use e-cigarettes, particularly products with higher nicotine content, “are more likely than those not using these products to try and to continue cigarette smoking.” Evidence also indicates that e-cigarettes may contribute to former smokers reinitiating tobacco use and sustaining nicotine use. A population-based, prospective cohort study found “no evidence that e-cigarette use helps adult smokers quit at rates higher than when these products are not used.” Moreover, while dual users may smoke fewer cigarettes, they tend to compensate with more e-cigarette use, which increases their overall exposure to nicotine. “Therefore, even though e-cigarettes might help maintain smoking reduction and lower withdrawal symptoms, the long-term health impact of dual use remains largely unknown.” AHA noted that, to date, “there is no experimental evidence to support the view that flavors help adults switch from combustible tobacco products or to quit tobacco altogether.” However, evidence suggests restricting flavoring in all tobacco can reduce the appeal of these products to adolescents and young adults.

78. Washington State Healthy Youth Survey Frequency Reports 2021.

The Washington State Healthy Youth Survey (HYS) is a bi-annual survey of Washington State youth to measure health risk behaviors that contribute to morbidity, mortality, and social problems. According to the 2021 Washington Healthy Youth Survey (HYS), approximately 8.7% of 8th graders, 13.0% of 10th graders, and 19.9% of 12th graders in Washington State have ever smoked a cigarette. The same survey found that 10.1% of 8th graders, 18.5% of 10th graders, and 31.7% of 12th graders had ever used an electronic cigarette or vape pen. The 2021 HYS also found that among 12th graders, 2.3% of students gave someone else money to buy tobacco, 2.1% borrowed (or bummed) tobacco from someone else, and 1.6% bought tobacco at a store such as a convenience store, supermarket, discount store, or gas station. About 6.3% of 10th graders and 9.8% of 12th graders reported that within the past 12 months, they tried to quit using all products that contain nicotine. Among 12th graders who took the 2021 HYS, the most common (8.8% of 12th graders) age reported for the first time they used an electronic cigarette or vape pen was age 15.

79. Possession of controlled substance—Penalty—Possession of useable cannabis, cannabis concentrates, or cannabis-infused products—Delivery. (Effective until July 1, 2023.), RCW 69.50.4013 RCW 69.50.4013(2022).

RCW 69.50.4013(1) states, “[i]t is unlawful for any person to knowingly possess a controlled substance unless the substance was obtained directly from, or pursuant to, a valid prescription or order of a practitioner while acting in the course of his or her professional practice, or except as otherwise authorized by this chapter.”

80. Search and seizure of controlled substances., RCW 69.50.509(1987).

RCW 69.50.509 establishes that after a sworn complaint and court appearance regarding probable cause of controlled substance manufacture or distribution, a warrant for search and seizure can be directed to any law enforcement officer.

81. Washington Association of Sheriffs and Police Chiefs Crime in Washington 2021 Annual Report 2021.

The Crime In Washington 2021 annual report was compiled from data submitted to the Washington State Uniform Crime Reporting Program of the Washington Association of Sheriffs and Police Chiefs by Washington State law enforcement agencies. The report states that in 2021, 5.5% of all people arrested for Drug/Narcotic Violations in Washington State were juveniles. There were 2,163 arrests of youth under 18 years old for Drug/Narcotic violations. Of these arrests, 4.6% were related to possessing or concealing cannabis and 10.4% were for possessing or concealing heroin. While law enforcement agencies may specify the type of Drug/Narcotic involved, there are no arrest data specific to the purchase, use, or possession of vapor or tobacco products.

82. Sale, delivery, or possession of legend drug without prescription or order prohibited—Exceptions—Penalty. (Effective until July 1, 2023.), RCW 69.41.030(2021). RCW 69.41.030 establishes unlawful possession of any legend drug (substances that require a prescription or are restricted to practitioner use).

83. Youth tobacco and vapor products prevention account—Source and use of funds, RCW 70.155.120 RCW 70.155.120(2019). RCW 70.155.120 establishes the youth tobacco and vapor products account in the state treasury. Fees collected regarding retailer, wholesaler, distributor violations, and funds collected by LCB from monetary penalties are deposited into this account, except that 10% of such fees and penalties are deposited in the state general fund.

84. Bureau United States Census. Quick Facts - Washington 2022. The U.S. Census Bureau provides statistics for all states and counties, and for cities and towns with a population of 5,000 or more. As of 2022, there were 1,689,516 youth under 18 years old in Washington State, representing 21.7% of the Washington State population.

85. Washington State Office of Financial Management State population forecast 2022. OFM produces the Washington state population forecast using a cohort component model. The data includes annual age and sex-specific population forecasts. OFM estimates that in 2022, there were 476,052 youth aged 5 through 9 years; 494,482 youth aged 10 through 14 years; and 480,909 youth aged 15 through 19 years.

86. Definitions, RCW 10.93.020 RCW 10.93.020(2021). RCW 10.93.020 outlines the definitions of Washington State peace officers. Washington State has both general authority and limited authority peace officers. Both are employed by a general authority Washington law enforcement agency. General peace officers are commissioned to enforce the criminal laws of the state of Washington generally. Limited authority peace officers detect or apprehend violators of the laws in some or all of the limited subject areas for which the agency at which they are employed is responsible.

87. LCB Enforcement Officer 2. State of Washington Classified Job Specification 2015; Available at: <https://ofm.wa.gov/state-human-resources/compensation-job-classes/ClassifiedJobListing/Specifications/1140#:~:text=Definition,arresting%20violators%3B%20and%20provides%20education>. Accessed.

Washington State Office of Financial Management stores and publishes information on state job descriptions. An LCB enforcement officer enforces state liquor, marijuana and tobacco laws by conducting investigations, financial audits, on-premises inspections, cites and arrests violators; and provides education.

88. **Peace officers—Reasonably identifiable., RCW 10.116.050 RCW 10.116.050(2021).** RCW 10.116.050 outlines Washington State peace officer uniform protocol. All law enforcement agencies are to adopt policies and procedures to ensure that uniformed peace officers while on duty and in the performance of their official duties are reasonably identifiable. For purposes of this section, "reasonably identifiable" means that the peace officer's uniform clearly displays the officer's name or other information that members of the public can see and the agency can use to identify the peace officer.

89. **Lee J. G., Landrine H., Torres E., et al. Inequities in tobacco retailer sales to minors by neighbourhood racial/ethnic composition, poverty and segregation, USA, 2015. *Tob Control*. 2016;25(e2):e142-e145.**

Lee et al. conducted a cross-sectional study to examine the national level neighborhood correlates of tobacco retailer underage sales. The authors analyzed 108,614 records of FDA inspection data from 2015, as well as the proportion of residents living close to retailers based on race, age, and poverty. The authors conducted multilevel logistic regression to determine the likelihood that a retailer in a particular neighborhood will fail an underage buy inspection. The results show that the likelihood of failing an inspection was positively associated with the proportion of American Indian residents, Black residents, Latino residents and residents less than age 65 under the poverty line in a neighborhood. In contrast, the likelihood of failing an inspection was negatively associated with the proportion of white residents and residents age 10–17. The authors found similar trends after conducting multivariable models to hold neighborhood characteristics constant. “For every 10-percentage point increase in the proportion of Black residents the odds of a retailer selling to a minor increased by 7%...” The authors suggest oversampling retailers in areas with higher likelihood of sales to youth.

90. **Huh J., Meza L. R., Galstyan E., et al. Association between federal and California state policy violation among vape shops and neighbourhood composition in Southern California. *Tob Control*. 2021;30(5):567-569.**

Huh et al. investigated the association between compliance with the FDA and California state rules as connected to neighborhood and ethnic composition of vape shop locations. The researchers worked with 122 vape shops in ‘ethnic enclave’ neighborhoods in Southern California where there were higher than average concentrations of Hispanic/Latinos, African Americans, non-Hispanic Whites, and Koreans. The researchers recorded shop observation data, including signage, the physical layout of the store, the built environment around the store, and customers at the store. The authors used multilevel logistic regression models to examine city-level neighborhood ethnic composition and vape shop rules violations. After controlling for other neighborhood characteristics, the results indicate that neighborhoods with more white people were significantly less likely to not display signage related to asking for ID, and were less likely to offer free sampling. The authors cite prior research to explain, “[p]ast studies have documented disparities in regulation compliance among tobacco retailers and showed an inverse relationship between regulation compliance by tobacco shops and ethnic diversity in

neighborhoods. In Florida, more tobacco sales to minors occurred in rural (vs urban) areas, in census blocks with higher proportions of Hispanic residents, and in neighborhoods with lower per capita income. Similar studies involving FDA inspection data across the USA have also shown that underage sales of tobacco were positively related to the proportion of residents with [B]lack and Latino ethnicities, adjusting for other neighborhood variables. Point-of-sale tobacco marketing is more prevalent in rural areas and in neighborhoods with lower income and more [B]lack residents. Recent studies on tobacco and vape shops in Colorado, California, Illinois, New York and Florida documented violation of vape products sales to minors comparable to that of the combustible cigarettes.”

91. Knox B. Increasing the Minimum Legal Sale Age for Tobacco Products to 21.: Campaign for Tobacco-Free Kids;2016.

In this report, the author presents an overview of the issues surrounding tobacco use among youth in the United States and outlines potential benefits to increasing the tobacco purchasing age to 21. Key points discussed include the modeling predictions from the 2015 Institute of Medicine report, tobacco company marketing towards youth, the success of raising the minimum drinking age to 21 and lessons learned, as well as the overall benefits to a Tobacco 21 approach.

92. Lydon David M., Wilson Stephen J., Child Amanda, et al. Adolescent brain maturation and smoking: What we know and where we’re headed. *Neuroscience and Biobehavioral Reviews*. 2014;45:323-342.

Lydon et al. conducted a review of the literature on adolescent brain development and nicotine dependence. They cite evidence that smoking is most likely to be initiated during adolescence and that most adults who smoke daily initiate smoking by 18 years of age. The authors also note that once adolescents begin smoking, they are more likely than adults to continue smoking because they experience heightened positive effects from nicotine and are more susceptible to developing nicotine addiction than adults. Research also indicates that individuals who smoked their first cigarette at a younger age and who had a more pleasant experience are more likely to smoke additional cigarettes. Early-initiation smokers also tend to develop nicotine dependence faster and have higher daily cigarette consumption rates than later-initiation smokers. The authors cite a 1996 study by Breslau and Pettersen which found that early smoking onset is associated with decreased likelihood of cessation. The likelihood of quitting was lowest for youth who initiated smoking at 13 or younger, with likelihood of quitting increasing with each year that initiation was delayed for adolescents.

93. Pediatrics American Academy of. Clinical Practice Policy to Protect Children from Tobacco, Nicotine, and Tobacco Smoke. *Pediatrics*. 2015;136(5):1008-1017.

The American Academy of Pediatrics presented recommendations for healthcare providers to reduce youth initiation and use of tobacco and vapor products. AAP noted that tobacco dependence is a severe addiction. They stated that options for youth who want to quit tobacco or vapor products “should be appropriate to the [youth’s] level of tobacco dependence, readiness to change, and treatments [they] are ready to accept. Research on the treatment of [youth] tobacco dependence is limited. Behaviorally based [tobacco cessation] programs are beneficial; however, they work best for those with minimal to mild tobacco dependence.” As of 2015, there were no FDA-approved tobacco dependence treatment medications available for youth under 18 years old. Youth may only access tobacco dependence treatment with a prescription from a licensed

healthcare provider. In addition, “[r]esearch on pharmacotherapy of moderate to severe [youth] tobacco dependence is limited by short courses of treatment, high rates of nonadherence, and high rates of relapse after discontinuation of therapy.”