

**Act 169 Dual Use of Cannabis Task Force
Permitted Interaction Group**

Public Health and Safety Working Group

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Executive Summary

In accordance with Act 169 SLH 2021, the Department of Health (DOH), Office of Medical Cannabis Control and Regulation (OMCCR) convened a task force to explore the development of a dual system program for legalized adult-use in addition to medical-use. The task force, referred to as “Dual Use of Cannabis Task Force,” formed the Public Health and Safety Working Group (“PHSWG”) to identify and recommend policies to safeguard public and consumer health and safety. Toward that objective, the PHSWG focused its investigation on evidence-based adverse health, safety, and environmental impacts.

A wide range of public health and safety harms associated with cannabis use have been identified. A major concern identified by the Substance Use and Mental Health Services Administration (SAMHSA) National Survey on Drug Use and Health (NSDUH) are developmental impacts on adolescents and young adults, for which substantial or moderate evidence show cognitive and academic impairment; increased risk of developing psychotic and other mental health disorders, including schizophrenia and more suicidal thoughts or attempts; and greater likelihood of progression to substance use disorders for cannabis, alcohol, tobacco, and other drugs in adulthood. Equally concerning are adverse fetal development outcomes resulting from cannabis consumption during pregnancy and breastfeeding. Biological evidence shows passage of THC through the placenta and breastmilk, and studies have shown resulting low birthweight, reduced cognitive function, decreased IQ and academic ability and attention problems among exposed offspring.

NSDUH research, as well as that of numerous other mental health specialists, has established association of cannabis use with neurological, cognitive, and mental health disorders among adults also. Individuals using cannabis have been associated with increased memory, learning, and attention impairments; psychotic disorders and symptoms; and higher depressive disorders, PTSD, and suicide. Cannabis use disorder can develop, particularly with increasing frequency of use, and prolonged use can lead to cyclic vomiting (i.e., cannabinoid hyperemesis syndrome) and heavy cannabis smoking to chronic bronchitis. Other adverse effects on physical health include increased risk of ischemic stroke among individuals under 55 years of age, and increased risk of cancer. Furthermore, clinically important drug-drug interactions between cannabis and multiple medications pose health complications for children and adults.

The National Institute on Drug Abuse (NIDA) continues to emphasize the traffic safety concerns that increased access to cannabis following legalization of adult-use presents. After alcohol, cannabis is the substance most often associated with impaired driving, and substantial evidence exists for increased risk of motor vehicle crash. Among individuals using cannabis less than weekly, smoking or orally ingesting ≥ 10 mg meaningfully impair driving ability. Combined use of cannabis and alcohol increases impairment and motor vehicle crash than use of either substance alone. There is evidence of a positive relationship between THC blood level and motor vehicle crash risk. A blood THC level of 2-5 ng/mL has a meaningful driving impairment effect. Among the studies examining the number of hours required to resolve or nearly resolve THC-induced driving impairment, substantial evidence found 8 hours after oral ingesting and 6 hours after smoking ≤ 18 mg THC, and moderate evidence shows 6 hours after smoking 35 mg THC, among those who use less-than-weekly. Blood THC levels among cannabis-impaired drivers are now higher than in the past.

The American Lung Association and U.S. Centers for Disease Control and Prevention (CDC) underscore the fact that cannabis smoke shares the same carcinogenic chemicals as tobacco smoke. Like tobacco smoke, cannabis smoke can cause a range of illnesses to not only the individual who smoke, but others exposed to secondhand smoke in the same household and multi-unit residences. Detectable THC concentrations have been found in children living in households with a parent, relative or caretaker who uses cannabis. A study on tobacco smoke reported that half of residents in multi-unit buildings experienced smoke entering their units despite smoke-free policies.

While legalized adult-use can have extensive public health effects, children, youth, pregnant women and elderly are among the most vulnerable populations needing protection. The American Academy of Pediatrics (AAP) highlights unintentional exposure in children can lead to significant clinical effects requiring medical attention. States with increased legal access have seen rises in unintentional pediatric poisoning. Use of child resistant packaging can reduce unintentional exposure, as has been found with pharmaceutical and other hazardous household products. Among U.S. adolescents, cannabis is the most widely used illicit drug, with over one in five children reporting current use in 2019. States and jurisdictions have implemented policies to reduce youth access, including restricting sales to licensed dispensaries; limiting retailer hours; applying extensive advertisement restrictions;

prohibiting retail near schools, youth centers, parks and playgrounds; and controlling products forms and packaging so that they are not attractive to children and youth. Cannabis is the most used illicit drug also among pregnant women, of who between 3-7% report use. Studies show increasing acceptance of use during pregnancy despite recommendations by the American College of Obstetricians and Gynecologists (ACOG) to discourage pregnant women from use due to its potential impact on the developing fetus. Increasing cannabis use has also been documented among adults ages 65 and above, whose chronic medical conditions and general decline in functioning places them at higher vulnerability for potential adverse effects. Product safety guidelines and policies can be established early and prior to adult-use access to ensure public safety and consumer protections. In addition to child-resistant packaging, labeling requirements are needed to prohibit unsubstantiated health claims. Laboratory testing requirements for contaminants currently in place for medical use products can be applied also to adult-use retail products. Also, because greater THC concentration has greater likelihood of adverse health outcomes, consumer protection can further be achieved through THC concentration caps and/or taxation of sales based on THC concentration.

Environmental impacts and their management are important considerations for expansion of the legal market to include adult-use. Cannabis cultivation and product manufacturing requires intensive energy use, especially if cultivated in a controlled indoor environment, which requires artificial lighting for at least a half-day, heating ventilation, air-conditioning, etc. As with any agricultural-based industry, there will be water and land use demand for cannabis. Effective management of water resources in other state requires automated watering producing less than 20% water runoff and filtration and reuse of wastewater. Proper land use management would ensure the long-term health of the land and soil. Specific attention should be paid to pesticides and heavy metals, which can be stored in cannabis and hemp plant material and become concentrated in manufactured products. Waste management bests practices can be implemented, such as on-site composting and fermentation, minimizing universal and hazardous waste through source-reduction and substitution (e.g., using LEDs insets of mercury-containing fixtures), and use of recyclable or biodegradable packaging materials. Air quality control options include carbon filtration for indoor cultivation facilities that are sealed and applying mass balance calculations to estimate and limit volatile organic compound (VOC) emissions from the manufacturing of products. VOC emissions from cannabis cultivation produces strong odors for

which DOH regularly receives complaints. Although difficult to regulate, odors can be managed through chemical masking or neutralizing agents. Plans for odor reduction can help improve quality of life for those living near cultivation facilities.

There may be additional important health, social and environmental impacts not yet known given that research on the effects of cannabis have been limited globally. Working with the evidence currently available, the PHSWG recommends a multisector response to provide protection to the public and endorses the 2020 American Public Health Association (APHA) Policy Statement, “A Public Health Approach to Regulating Commercially Legalized Cannabis”. APHA recommendations include policy actions and regulations to protect children, youth and other vulnerable populations, minimize harm to the public, and monitor public health and safety outcomes. **To guide the public health response in the State of Hawaii, the PHSWG recommends the establishment of a Public Health Advisory Committee comprising of health care professionals with medical and scientific expertise in fields that interest with cannabis use, as well as a comprehensive surveillance to monitor legalized adult-use public health and social impacts.**

There are real challenges to regulating adult-use alongside protecting medical use. The modest effects that have been observed thus far across states that have legalized adult-use cannot be assumed to predict long term effects of commercialization. Continual collaboration and coordination of multiple government agencies, the industry, and the public can assist to navigate the State through complex undertakings to safeguard public health.

Working Group Recommendations

Adopt APHA Recommendations for Monitoring and Addressing Cannabis-Related Problems

The PHSWG endorses the recommendations of the 2020 American Public Health Association Policy Statement, “A Public Health Approach to Regulating Commercially Legalized Cannabis” (Policy Number 20206), which calls for the following policy actions for the regulation of “commercial adult use markets” at the state level.

- Provide protection to children and youth and other vulnerable and marginalized populations through careful regulation of:
 - (1) The availability of and access to cannabis products;
 - (2) Advertising and marketing;
 - (3) Product potency, form, and characteristics; and
 - (4) Packaging and labeling
- Minimize harm to the public through:
 - (1) Effective prevention education;
 - (2) Protection of clean indoor air;
 - (3) Prevention of impaired driving;
 - (4) Adoption of policies to promote and protect health equity; and
 - (5) Investment in public health and safety programs
- Monitor patterns of cannabis use and related public health and safety outcomes through:
 - (1) Population-based surveys;
 - (2) Syndromic surveillance; and
 - (3) Other data sources

Although the issues related to cannabis use continue to evolve, the following evidence-based strategies for monitoring and addressing impacts remain relevant.

- Require age restrictions and enhanced reinforcement to limit access to commercial cannabis among adolescents.
- Counsel women on the potential implications of cannabis use during pregnancy and while breastfeeding.
- Restrict cannabis-related advertising to the maximum extent allowable under U.S. and state law, incorporating lessons learned from alcohol and tobacco control.
- Require messaging about potential overconsumption to reduce overdose and poisoning resulting from the increasing THC content in cannabis products.

- Prohibit product forms and characteristics that may attract youth, including fruit flavors and flavor-sounding brand names (e.g., “Girl Scout Cookie”), shapes and forms that imitate existing products marketed to children or youth (e.g., flavored gummies), and products with images of people, animals, or cartoons.
- Require plain and opaque packaging subject to small, approved, and limited brand elements that discloses all ingredients, including flavoring agents and diluents, as well as the percentage and milligrams for THC, CBD (cannabidiol), and any other psychoactive cannabinoid. Following the lead of tobacco and alcohol packaging, require specific warnings about health risks with substantial evidence of harm to be prominent on all cannabis product packages and prominently posted in retail locations and advertisements.
- Link taxes to THC doses or THC content to discourage market trends toward higher potency, help price adolescents out of the market, and reduce overconsumption and problem consumption.
- Dedicate funding from taxation of cannabis products to support evidence-based drug prevention and health education campaigns.
- Maintain the tobacco smoke-free air achievements of denormalizing smoking and protecting workers, children, and adult nonsmokers from secondhand smoke. Protect these major public health gains from threats by public cannabis smoking and vaping, outdoor cannabis events, and consumption lounges, as well as renormalizing the perception of smoking among youth and the public.
- Require and monitor for retailer compliance with minimum age requirements and enforce laws against underage sales to help prevent motor vehicle accidents related to impaired driving.
- Keep health equity and social justice at the forefront of all public health policies and enforcement efforts.

Establish Comprehensive Surveillance to Monitor Public Use and Public Health Harms

A comprehensive surveillance program is needed to monitor the use of and exposure to cannabis and associated health and social impacts. While DOH is best positioned to establish and implement surveillance, the data needed is spread across multiple DOH programs and other State and County agencies. Dedicated partnerships with relevant agencies to collect and provide required data will be key to ensuring comprehensive monitoring of legalized adult-use impacts. The surveillance program should include:

- Systematic surveillance that monitors cannabis use and exposure trends and risk associations among Hawaii’s population.
- Quantification of adverse events, including but not limited to:
 - (1) Cannabis-attributable hospitalizations and emergency department visits;
 - (2) Traffic-related fatalities and impaired driving; and
 - (3) Cannabis dependence or addiction treatment rates.
- Monitoring of adverse effects from prolonged cannabis use, particularly cannabinoid hyperemesis syndrome or cyclic vomiting, and outcomes among medical use patients, such as drug interactions.

To achieve effective and equitable policy and programming, surveillance systems should identify health disparities associated with cannabis use, and operational research should be conducted as needed to identify effective interventions and programs that prevent cannabis-related harms across specific populations. Adverse event monitoring should give particular attention to youths and pregnant women, so that there is at minimum systematic tracking of accidental pediatric ingestion of cannabis and adverse birth outcomes among mothers who use cannabis, as well as the impacts on elderly (i.e., tracking of injuries resulting from falls, etc.).

This information should be used to evaluate and guide the development of policies, implementation of programs, and health messaging to ensure protection of the public’s health and safety and to monitor the impacts of legalization (i.e., demand, use, product type and safety, etc.); and the impact of policies on cannabis-related social outcomes, including arrests or other criminal violations and school graduation rates, attendance, and discipline incidents. It will be important also to evaluate messaging and communication campaigns aimed at improving public knowledge and awareness.

Convene a Public Health Advisory Committee

DOH should convene a Public Health Advisory Committee analogous to the Colorado Department of Public Health and Environment (CDPHE) Retail Marijuana Public Health Advisory Committee (RMPHAC) comprised of health care professionals, appointed by CDPHE, who have expertise in fields that intersect with cannabis use.

Backgrounds of current RMPHAC members include: the director of the Rocky Mountain Poison and Drug Safety; a professor of medicine with research background in the effects of tobacco and cannabis on lung health; co-director of the Colorado School of Public Health Program for Injury Prevention, Education, and Research; a staff neuropsychologist at the University of Colorado Hospital Neuropsychology Clinic; the CDPHE State Marijuana Laboratory Sciences Program Manager; a professor of natural products pharmacology; a pediatrician and neonatologist; an emergency medical physician and toxicologist; the Medical Director of the Consultation-Liaison Psychiatry Service at Denver Health Medical Center; the associate director of Denver Public Health; a board-certified addiction psychiatrist; and an assistant professor of pediatrics with board certifications in pediatrics, pediatric emergency medicine, and medical toxicology.

RMPHAC duties include:

- Review of the scientific literature currently available on health effects of marijuana use.
- Judge and openly discuss the science using expert medical and scientific opinion.
- Come to consensus on population health effects of marijuana use based on current science.
- Come to consensus on translation of the science into public health messages.
- Recommend public-health-related policies based on the current science and expert opinion and present these in a report every two years.
- Identify and prioritize gaps in the science important to public health.

Background and Scope of Report

Act 169 SLH 2021 charged the Department of Health (DOH), Office of Medical Cannabis Control and Regulation (OMCCR) with convening a task force (“Dual Use of Cannabis Task Force”) to explore the development of a dual system program for the legalization of cannabis, i.e., legalized adult-use in addition to medical-use, and the impacts of the legalization of cannabis on qualifying patients, including access to medical cannabis by qualifying patients. OMCCR is required to submit a report of task force findings and recommendations, including any proposed legislation, to the legislature no later than twenty days before the convening of the regular session of 2023.

The Public Health and Safety Working Group (“PHSWG”) was formed at the June 27, 2022 Dual Use of Cannabis Task Force meeting. PHSWG was charged with identifying and making recommendations on policies to “safeguard public and consumer health and safety, including preventing youth access, impaired driving, use disorder, and impacts to mental health.” In alignment with the Hawaii Department of Health’s goal of promoting and preserving a clean, healthy, and natural environment, the PHSWG report includes energy and environmental impacts of the cannabis industry.

Due to the competing priorities of its members, PHSWG met only once, on June 27, 2022, and only four of six members were able to attend. A summary of key points from that meeting is attached as Appendix 1. Due to the limited input received from members, this report was written solely by the Chair and circulated for review and approval by PHSWG members.

This report takes no position on the merits or drawbacks of the legalization of a dual-use system of cannabis. This report seeks only to inform the Dual Use Task Force, legislators, and the public of the impacts on health, safety, and the environment that should be addressed in responsibly expanding from medical-use to a dual-use system that includes legalized adult-use.

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Working Group Report

Introduction

As of August 2022, 19 states, the District of Columbia, Guam, and the Northern Mariana Islands have legalized adult-use cannabis. An additional 20 states allow for medical use, leaving only 11 states that either do not allow any form of cannabis or only cannabidiol/low THC (delta-9 tetrahydrocannabinol) for medical use. Several of these have impending legislation that may legalize medical- or adult-use this fall.

The purpose of this report is to inform the Dual Use of Cannabis Task Force on the range of public health and safety harms associated with cannabis use and the increased access to cannabis that comes with legalization, as well as the larger community and environmental impacts resulting from expanded cannabis cultivation, manufacturing, and consumption. As such, this investigation focuses on science- and evidence-based negative health, safety, and environmental impacts. Health impacts for which such evidence is limited, mixed, insufficient, or lacking are not included. In addition, therapeutic benefits, as well as harms resulting from social inequities are not a part of this report. Where possible, practices and policies to help mitigate impacts are suggested. What is not included in this report are health impacts for which such evidence is limited, mixed, insufficient, or lacking. Also not included are therapeutic benefits, as well as harms resulting from social inequities.

According to the 2020 National Survey on Drug Use and Health (NSDUH)¹, an estimated 49.6 million people aged 12 or older (17.9 percent of the U.S. population) reported using cannabis in the past year, including 2.8 million first-time users, 1.0 million of whom were adolescents aged 12 to 17. An estimated 32.8 million reported past month or “current” use. Although 70.7% of the U.S. adult population perceived great risk of harm associated with smoking one or more packs of cigarettes a day and 68.7% with having four or five alcoholic drinks nearly every day, only 27.4% perceived great risk from smoking cannabis weekly.

Along with the prevalence of use and the lack of perceived risk associated with cannabis use, the increasing intensity of use is cause for growing concern. The 2017 National Academies of Sciences, Engineering, and Medicine (2017 NASEM) report² found that among current cannabis users, the proportion of heavy or “daily/near-daily” users increased from about one in nine in 1992 to more than one in three in

2014. By one estimate, heavy users accounted for three-quarters of cannabis-related expenditures.³ Cannabis products come in an increasing myriad of forms and are consumed in various ways, from smoking or inhaling to ingestion or absorption through the skin or mucosal tissues. These forms can vary widely in their THC and other cannabinoid content. The route of administration can affect the onset, intensity, and duration of effects and their addictive potential.⁴ The lack of information to guide individuals in making appropriate personal choices regarding cannabis use compared to other substances such as alcohol and tobacco is a significant public health concern, especially for vulnerable populations such as pregnant women and adolescents.

Although molds, yeast, bacteria, heavy metals, growth enhancers, and pest control chemicals are common contaminants introduced during cultivation, manufacturing processes can also result in pesticide and residual solvent contamination of products. In addition, delivery systems such as vape hardware can be the source of heavy metals that leach into vape liquid and subsequently into the aerosol produced and inhaled by users. Finally, ingredients such as flavorings and excipients which may be considered safe for use in foods may not be similarly safe for inhalational use, as evidenced by the strong association of Vitamin E acetate, a fat-soluble vitamin that occurs naturally in many foods, with the 2019 outbreak of e-cigarette or vaping associated lung injury (EVALI).

Health Impacts Related to Cannabis Use or Exposure

This section draws heavily from two primary sources of information: 1) The 2017 NASEM report⁵ and 2) Evidence Statements of the Colorado Department of Health and the Environment, Retail Marijuana Public Health Advisory Committee (RMPHAC).⁶ Methodology for RMPHAC's literature process may be found at: <https://marijuanahealthinfo.colorado.gov/our-process>. A summary table of the health and safety impacts, including those with limited evidence, is attached as Appendix 2.

Adolescents and Young Adults

- **Cognitive and Academic Effects:** MODERATE evidence that adolescents and young adults who use cannabis weekly or more frequently are more likely than non-users to have ongoing impairment of cognitive and academic abilities for at least 28 days after last use.^{7, 8, 9}

- **College Completion:** MODERATE evidence that adolescents and young adults who use cannabis weekly or more frequently are less likely than non-users to attain a college degree.^{10, 11, 12, 13, 14, 15, 16}
- **High School Graduation:** SUBSTANTIAL evidence that adolescents who use cannabis weekly or more frequently are less likely than non-users to graduate from high school.^{17, 18, 19, 20, 21, 22, 23, 24, 25, 26}
- **Psychotic Disorders:** SUBSTANTIAL evidence that adolescents and young adults who use cannabis daily or near-daily are more likely than non-users to develop future psychotic disorders like schizophrenia in adulthood.^{27, 28, 29, 30, 31, 32, 33}
- **Psychotic Symptoms:** SUBSTANTIAL evidence that adolescents and young adults who use cannabis are more likely than non-users to develop future psychotic symptoms, and this likelihood increases with more frequent use.^{34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48}
- **Suicide:** MODERATE evidence that adolescents and young adults who use cannabis are more likely than non-users to have suicidal thoughts or attempt suicide.^{49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64}
- **THC Concentration and Future Cannabis Use:** MODERATE evidence that adolescents and young adults who use cannabis with higher THC concentration (>10% THC) are more likely than non-users to continue use.^{65, 66, 67, 68}
- **THC Concentration and Mental Health:** MODERATE evidence that adolescent and young adults who use cannabis with higher THC concentration (>10% THC) are more likely than non-users to develop future mental health symptoms and disorders.^{69, 70, 71}
- **Alcohol Use:** MODERATE evidence that adolescent and young adult cannabis users are more likely than non-users to use alcohol or have alcohol use disorder in adulthood.^{72, 73, 74, 75, 76, 77}
- **Cannabis Use Disorder:** SUBSTANTIAL evidence that cannabis users can develop cannabis use disorder, including adolescent and young adult users.^{78, 79, 80, 81, 82, 83, 84, 85}
- **Future Cannabis Use:** SUBSTANTIAL evidence that adolescent and young adult cannabis users are more likely than non-users to increase their use and to develop cannabis use disorder in adulthood.^{86, 87, 88, 89, 90, 91, 92, 93, 94}
- **Other Drug Use:** SUBSTANTIAL evidence that adolescent and young adult cannabis users are more likely than non-users to use or have a substance use disorder for other drugs in adulthood.^{95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107}

- **Tobacco Use:** SUBSTANTIAL evidence that adolescent and young adult cannabis users are more likely than non-users to use tobacco or have tobacco use disorder in adulthood.^{108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119}

Pregnancy and Breastfeeding

- **Low Birthweight:** SUBSTANTIAL evidence of association between maternal cannabis smoking and lower birth weight of offspring¹²⁰
- **Small for Gestational Age:** MODERATE evidence that maternal use of cannabis during pregnancy is associated with infants being born small for gestational age (birth weight less than 10th percentile for gestational age)^{121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135}
- **Academic Ability:** MODERATE evidence that maternal cannabis use during pregnancy is associated with decreased academic ability of exposed offspring^{136, 137, 138, 139}
- **Attention Problems:** MODERATE evidence that maternal use of cannabis during pregnancy is associated with attention problems in exposed offspring^{140, 141, 142, 143, 144, 145}
- **Cognitive Function:** MODERATE evidence that maternal use of cannabis during pregnancy is associated with reduced cognitive function in exposed offspring^{146, 147, 148}
- **IQ:** MODERATE evidence that maternal use of cannabis during pregnancy is associated with decreased IQ scores in exposed offspring^{149, 150}
- **THC Passage from Mother to Fetus:** BIOLOGICAL evidence shows that THC is passed through the placenta of women who use cannabis during pregnancy and that the fetus absorbs and metabolize the THC and passes THC metabolites in the meconium^{151, 152, 153, 154, 155, 156}
- **THC in Breastmilk:** BIOLOGICAL evidence shows that infants who drink breast milk containing THC absorb and metabolize the THC¹⁵⁷
- **THC in Breastmilk:** BIOLOGICAL evidence shows that THC is present in the breast milk of women who use cannabis and may persist for several weeks after reported last use^{158, 159, 160, 161}

Cancer

- **Pre-Cancerous Lesions:** SUBSTANTIAL evidence that daily or near-daily cannabis smoking is associated with pre-malignant lesions in the airway^{162, 163, 164}
- **Cannabis Smoke:** SUBSTANTIAL evidence that cannabis smoke, both mainstream and sidestream, contains many of the same cancer-causing chemicals as tobacco smoke^{165, 166, 167, 168, 169}

- **Testicular Cancer:** MODERATE evidence that cannabis use among adult males is associated with an increased risk of non-seminoma testicular cancer.^{170, 171, 172, 173, 174, 175}

Cardiovascular Effects

- **Stroke:** MODERATE evidence that cannabis use increases risk of ischemic stroke in individuals younger than 55 years of age.^{176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190}

Gastrointestinal Effects

- **Cyclic Vomiting:** MODERATE evidence that long-time, daily or near-daily cannabis use is associated with severe recurrent vomiting (cannabinoid hyperemesis syndrome).^{191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206}

Respiratory Effects

- **Chronic Bronchitis:** SUBSTANTIAL evidence that heavy cannabis smoking is associated with chronic bronchitis, including chronic cough, sputum production, and wheezing.^{207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217}

Neurological, Cognitive and Mental Health Effects

- **Learning, Memory, and Attention:**
SUBSTANTIAL evidence that adults who use cannabis daily or near-daily are more likely than non-users to have memory impairments for at least seven days after last use.^{218, 219, 220, 221, 222, 223, 224, 225, 226}
MODERATE evidence of association between acute cannabis use and impairment in learning, memory, and attention.²²⁷
- **Psychotic Disorders and Symptoms:**
SUBSTANTIAL evidence that THC intoxication can cause acute psychotic symptoms, which are worse with higher doses.^{228, 229, 230, 231, 232, 233, 234, 235}
SUBSTANTIAL evidence that adults who use cannabis daily or near-daily are more likely than non-users to be diagnosed with a psychotic disorder, such as schizophrenia.^{236, 237, 238, 239, 240, 241, 242}
MODERATE evidence that individuals who use cannabis with THC concentration >10% THC are more likely than non-users to be diagnosed with a psychotic disorder, such as schizophrenia.^{243, 244, 245}
- **Cannabis Use Disorder:**
SUBSTANTIAL evidence of association between increases in cannabis use frequency and progression to developing cannabis use disorder.²⁴⁶

SUBSTANTIAL evidence that cannabis users can develop cannabis use disorder.^{247, 248, 249, 250, 251, 252, 253, 254, 255}

- **Withdrawal Symptoms:** SUBSTANTIAL evidence that individuals who use cannabis daily or near-daily can experience withdrawal symptoms when abstaining from cannabis.^{256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272}
- **Bipolar Disorders:** MODERATE evidence of association between regular cannabis use and increased symptoms of mania and hypomania in individuals diagnosed with bipolar disorders.²⁷³
- **Depressive Disorders:** MODERATE evidence of association between cannabis use and a small increased risk for development of depressive disorders.²⁷⁴
MODERATE evidence that major depressive disorder is a risk factor for the development of cannabis use disorder.²⁷⁵
- **PTSD:** MODERATE evidence of association between cannabis use disorder and increased severity of posttraumatic stress disorder symptoms.²⁷⁶
- **Social Anxiety Disorder:** MODERATE evidence of association between regular cannabis use and increased incidence of social anxiety disorder.²⁷⁷
- **Suicide:**
MODERATE evidence of association between cannabis use and increased incidence of suicidal ideation and suicide attempts, with a higher incidence among heavier users.²⁷⁸
MODERATE evidence of association between cannabis use and increased incidence of suicide completion.²⁷⁹

Drug-Drug Interactions

- **Interactions with Medications:** There is credible evidence of clinically important drug-drug interactions between cannabis and the following medications: chlorpromazine, clobazam, clozapine, CNS depressants (e.g., barbiturates, benzodiazepines), disulfiram, hexobarbital, hydrocortisone, ketoconazole, MAO inhibitors, phenytoin, protease inhibitors (e.g., indinavir, nelfinavir), theophylline, tricyclic antidepressants and warfarin. The lack of a cited interaction does not preclude the possibility that drug interactions exist; it simply means no studies have yet reported an interaction with that particular drug.^{280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298}
See the RMPHAC Drug Interactions Table at:
<https://marijuanahealthinfo.colorado.gov/drug-interaction-table>. A summary table of the Drug Interactions Table is attached as Appendix 3.

Public Safety Concerns

Impaired Driving

After alcohol, cannabis is the substance most often associated with impaired driving.²⁹⁹ Cannabis use can impair important skills required for safe driving by slowing reaction time and ability to make decisions, impairing coordination, and distorting perception.

- **Cannabis Plus Alcohol Crash Risk:** SUBSTANTIAL evidence that the combined use of cannabis and alcohol increases impairment and motor vehicle crash risk more than use of either substance alone.^{300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311}
- **Blood THC and Crash Risk:** MODERATE evidence for a positive relationship between THC blood level and motor vehicle crash risk.^{312, 313, 314}
- **Blood THC and Driving Impairment:** SUBSTANTIAL evidence that for cannabis users who use less-than-weekly and/or with a whole blood THC of 2-5 ng/mL, there is meaningful driving impairment.^{315, 316, 317, 318, 319, 320, 321}
- **Blood THC in Impaired Drivers:** MODERATE evidence that blood THC levels of cannabis-impaired drivers are higher now than in the past.³²²
- **Crash Risk:** SUBSTANTIAL evidence that recent cannabis use by a driver increases their risk of motor vehicle crash.^{323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333}
- **Ingesting and Driving Impairment:** SUBSTANTIAL evidence that for cannabis users who use less-than-weekly, orally ingesting 10 mg or more of THC is likely to meaningfully impair driving ability.^{334, 335, 336, 337}
- **Smoking and Driving Impairment:** SUBSTANTIAL evidence that for cannabis users who use less-than-weekly, smoking more than about 10 mg THC (or part of a currently available cannabis joint) is likely to meaningfully impair driving ability.^{338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351}
- **Time Before Driving – Ingestion:** SUBSTANTIAL evidence that delaying driving at least 8 hours after oral ingestion of less than 18 mg THC allows THC-induced impairment to resolve or nearly resolve for users who use less-than-weekly.^{352, 353, 354, 355}
- **Time Before Driving – Smoking 35mg THC:** MODERATE evidence that delaying driving at least 6 hours after smoking about 35 mg THC allows THC-induced impairment to resolve or nearly resolve for users who use less-than-weekly.^{356, 357, 358}
- **Time Before Driving – Smoking <18mg THC:** SUBSTANTIAL evidence that delaying driving for at least 6 hours after smoking less than 18 mg THC

allows THC-induced impairment to resolve or nearly resolve for users who use less-than-weekly.^{359, 360, 361, 362, 363, 364, 365}

Second-Hand Smoke

There is SUBSTANTIAL evidence that cannabis smoke, both mainstream and sidestream, contains many of the same cancer-causing chemicals as tobacco smoke.^{366, 367, 368, 369, 370} Exposure to cannabis smoke can cause respiratory symptoms, exacerbate respiratory conditions such as asthma, bronchitis, and chronic obstructive pulmonary disease (COPD),^{371, 372, 373} and increase the risk of stroke.³⁷⁴ Heavy passive exposure to cannabis smoke can result in measurable concentrations of THC in nonusers' blood serum and urine.³⁷⁵ Exemptions for cannabis smoking or vaping in state or local smoke-free laws is a public health concern that this will expose the public to secondhand cannabis smoke and renormalize smoking.³⁷⁶

- **Multi-Unit Residential Settings:** Secondhand smoke, whether from tobacco or cannabis spreads through multi-unit dwellings, impacting the health of other residents. Although property owners have the legal authority to adopt smoke-free policies which can include smoking or vaping of medical or adult-use cannabis,³⁷⁷ a study reported that 50 percent of residents in multi-unit buildings where smoke-free policies were enforced experienced smoke entering their units from adjacent units.³⁷⁸
- **Household Exposures:** In addition to the same toxic and cancer-causing chemicals found in tobacco smoke, secondhand cannabis smoke also contains THC which can be passed on to other household members including infants and children. Studies have found strong associations between having someone in the home who uses cannabis (e.g., a parent, relative, or caretaker) and children having detectable levels of THC.^{379, 380} States should ensure that early care and education setting regulations include protections for children from unintended cannabis exposure as well as impaired childcare providers.³⁸¹

Protecting Vulnerable Populations

Children and Youth

Preventing unintentional exposure of cannabis among children and preventing youth use are critical public health priorities. Increases in unintentional pediatric

exposures after legalization are well documented. Canada found pediatric emergency department exposures that were 7 times higher than the rates reported in Colorado after adult-use legalization and with increased severity requiring hospitalization, despite strict regulations that largely exceed requirements in the U.S.³⁸² Cannabis is the most widely used illicit drug by adolescents in the United States. In 2019, 21.7% of high school students reported current (past 30-day use) cannabis use.³⁸³ Cannabis use during adolescence and young adulthood can harm the developing brain and some of these effects may be permanent.^{384, 385}

- **Unintentional Exposures in Children:** SUBSTANTIAL evidence that more unintentional cannabis exposures for children occur in states with increased legal access to cannabis; and the exposures can lead to significant clinical effects requiring medical attention.^{386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397}
- **Child-Resistant Packaging:** MODERATE evidence that the use of child-resistant packaging reduces unintentional pediatric poisonings from a wide range of hazardous household products including pharmaceutical products.^{398, 399, 400}
- **Underage Access:** The American Academy of Pediatrics “strongly recommends strict enforcement of rules and regulations that limit access, marketing, and advertising to youth.”⁴⁰¹ To reduce youth access, states and jurisdictions should restrict sales to only licensed dispensaries, and limit retailer hours and manner of delivery. A recent assessment of retail cannabis dispensary compliance with underage access and marketing restrictions in California found that 67.9% of the 700 retail locations assessed failed to comply with the age-limit signage requirement.⁴⁰² In addition, although retail locations were generally compliant with ID checks, most did not check IDs until customers entered the premises, a practice that allows entering minors to be exposed to advertisements, products, packaging, and paraphernalia, etc.⁴⁰³ Delivery services pose the additional challenge of age verification of order recipients.
- **Advertising Restrictions:** The perceived harmfulness of using cannabis is softening and adolescents are likely to be influenced by advertisements to accept and normalize substance use behaviors. 58.7% of adolescents who responded to the questions about exposure to cannabis advertisements on the combined 2014 and 2015 Monitoring the Future studies reported exposure to cannabis advertisements on storefronts, magazines or newspapers, billboards, internet, television, and radio. Increased exposure to tobacco and alcohol marketing is strongly associated with increases in youth use of these products.^{404, 405, 406, 407 408, 409, 410, 411} Similarly, exposure to

cannabis advertisements is significantly associated with current use among adolescents.^{412, 413} Cannabis advertising should be limited by:

- (1) Content-neutral advertising restrictions;⁴¹⁴
 - (2) Restricting advertising content, messages, or imagery; and
 - (3) Time, place, or manner restrictions.⁴¹⁵
- **Location and Density of Retail Locations:** Expansion to legalized adult-use will result in increased numbers of retail locations. The location and numbers of these will depend on the state's implementation of license and density limits and zoning rules. Most states have siting restrictions that require minimum distancing from schools, childcare, youth centers, parks, and playgrounds. Many include additional requirements to comply with county or municipal ordinances, and some leave this to local communities. Oregon explicitly prohibits retail and wholesale licensed premises from exclusively residential zones. Retailer proximity and density has been with increases in current and frequent use among adults and young adults, as well as increased use by pregnant women.^{416, 417, 418}
 - **Product Forms and Packaging Attractive to Youth:** Cannabis products with added fruit- and candy-like flavorings and scents are likely to be attractive to youth.⁴¹⁹ A study commissioned by the Washington State Liquor and Cannabis Board, found that children are attracted to food packaging that includes color, novel shapes such as stars or animals, and cartoon or promotional characters, and products that smell sweet, fruity, or like candy.⁴²⁰ Efforts to reduce youth-appealing marketing and implementation of plain packaging laws for tobacco products have led to reductions in youth tobacco use.^{421, 422} Similarly, cannabis products can be made less attractive to children and youth by restricting names, flavors, images, shapes, colors, logos, and branding on packaging,⁴²³ and prohibiting products and packaging that imitate commercial non-cannabis products.⁴²⁴ As emphasized in the June 2022 letter to Congress from a bipartisan coalition of attorneys general in response to copycat cannabis products mimicking major snack brands contributing to increased child poisonings, reprehensible packaging practices "pose a grave risk to the health, safety, and welfare of our children." A copy of the letter is attached as Appendix 4. Product forms and packaging that are attractive to youth should be prohibited using clear, detailed, and enforceable regulations.

Pregnant Women

Cannabis is the most used illicit drug during pregnancy.⁴²⁵ National estimates show that between 3–7% of pregnant women report using cannabis while pregnant.^{426, 427} In August 2019, the U.S. Surgeon General issued an advisory against the use of cannabis during pregnancy, citing the 2018 American Academy of Pediatrics recommendation that cannabis should not be used during pregnancy due to its potential impact on the developing fetus⁴²⁸ and the American College of Obstetricians and Gynecologists recommendation that pregnant women be encouraged to discontinue cannabis use and counseled about the potential adverse health consequences of continued use during pregnancy.⁴²⁹ Despite these recommendations, with the increasing acceptance and accessibility of cannabis and the perceived lack of risk, use among pregnant women has continued to increase.^{430, 431, 432, 433, 434, 435, 436} Evidence suggests that concerns about how substances may affect their baby can motivate women to reduce or discontinue use, however, studies have found that health care professionals may not counsel women who disclose cannabis use during pregnancy.^{437, 438, 439}

Older Adults

Cannabis use among older adults (aged 65 and above) continues to increase.⁴⁴⁰ The safety of cannabis use in this population is important because aging is associated with changes in metabolism, increasing chronic medical conditions and prescription medication use, and a general decline in functioning.⁴⁴¹ As a result, older adults may be especially vulnerable to potential adverse effects from cannabis.⁴⁴²

Product Safety

Additives/Ingredients

Manufactured products (with exception of kief and hashish) often require the use of solvents for extraction and additives such as propylene glycol, polyethylene glycol, vegetable glycerin, medium-chain triglycerides, vitamin E acetate, and terpenes from non-cannabis plant sources.⁴⁴³ In addition, edible cannabis products are made with food ingredients and are subject to the same quality control risks as conventional food items.⁴⁴⁴ The potential health risks associated with additives was sharply emphasized by the nationwide outbreak of lung-injury associated with THC-containing e-cigarette, or vaping, products (EVALI),⁴⁴⁵ that resulted in 2,807 cases and 68 confirmed deaths. Vitamin E acetate, an additive in vaping products was

strongly linked to the illnesses. Resulting state responses have included: banning some or all excipients or diluents from vaped products, including terpenes, or strictly limiting levels to those which would naturally occur in the plant; allowing only items on FDA's list of inactive ingredients approved for use in drug products in aerosolized products; requiring pre-approval of all new products; implementing additional controls on the heating elements of vaping device; and expanding product testing requirements.

THC Concentration

The effects of cannabis are determined primarily by the amount of THC, and to a lesser extent other cannabinoids, as well as the mode of delivery (e.g., inhaled vs. consumed, etc.) and individual response of the consumer. The concentration of THC in cannabis plants has steadily increased over the past few decades.^{446, 447, 448, 449} Similarly, THC concentrate products have been found to have increasingly higher levels of THC.^{450, 451} As described above, young people and those with certain pre-existing mental health conditions are especially vulnerable to the adverse effects of THC. The bottom line is – the greater the concentration of THC in cannabis products, the greater the likelihood of adverse health effects. In addition to targeted health messaging, state approaches to addressing this concern have focused primarily on implementation of THC caps in manufactured products and taxation of sales based on THC concentration to discourage the purchase of high THC products.

Packaging and Labeling

Packaging should be regulated to reduce youth access by requiring packaging to be tamper-resistant, opaque, resealable, child-resistant consistent with the Poison Prevention Packaging Act. Labeling of cannabis-infused edibles should, at a minimum, include nutrition facts and serving sizes, ingredient and allergen lists, expiration dates, and lot numbers, and explicitly prohibit false statements or unsubstantiated health claims.⁴⁵² Labeling should also include clear and large written and pictorial warnings of the adverse health effects of cannabis use and a prominent universal cannabis symbol.⁴⁵³

Laboratory Testing

Laboratory testing is a key part of assuring the safety of cannabis products.⁴⁵⁴ Fungal contamination may cause pneumonia^{455, 456, 457, 458, 459} and aflatoxins, which may survive smoking, are carcinogenic.^{460, 461} Heavy metals may be bioaccumulated by cannabis plants during cultivation, cross-contamination during processing,⁴⁶² or leach into products from packaging or product components such

as vapes. Pesticides, growth regulators, and other chemical contaminants can result from the use of these in cultivation, cleaning and maintenance of facilities, and manufacturing.^{463, 464, 465} A significant challenges of implementing testing requirements is the lack of standardized methods and the ever-increasing types of matrices that cannabis products represent. Another layer of complexity is regulating the testing laboratories themselves. More states are moving toward establishing a reference or quality assurance laboratory and implementing proficiency testing processes to ensure that testing is accurate, reliable, and reproducible.

Energy and Environmental Impacts

Cannabis cultivation and manufacturing of cannabis products can have significant impacts on energy consumption and the environment. Protecting Hawaii's unique environment and precious natural resources, as well as the enjoyment of these by residents and visitors, are important considerations for expansion of the legal market to include adult-use. The following are key, but not exhaustive, issues related to energy and the environment that the legislature will need to keep in mind in enacting dual use of cannabis legislation.

Energy Use

Indoor cannabis cultivation is very energy-intensive, and the energy demands from indoor cultivation are the greatest contributor to the cannabis industry's environmental footprint. However, the controlled environment of indoor cultivation can help to safeguard plant quality, as well as reduce production time by one-third, helping to ensure a consistent supply. Optimizing yield significantly impacts the resulting cost of cannabis flower and manufactured products. Indoor cultivation relies heavily on electricity to run artificial lights, heating, ventilation, air-conditioners, and dehumidifiers, with lighting and HVAC/DH systems encompassing 50-80% of the energy used in cultivation facilities.⁴⁶⁶ Cannabis in the vegetative stage, when plants are growing, are kept under a minimum of 12-18 hours of growing light, while plants undergoing flowering are kept below 12 hours of light. Since energy consumption is responsible for generating a large portion of greenhouse gases and other air pollutants, attention should be given to requiring energy efficiency in the industry. Best practices identified include tracking individual licensee energy usage to establish baseline metrics and requiring HVAC/DH efficiency minimums or design requirements.

Water Use

Article XI, Section 7, of the State Constitution provides that “The State has an obligation to protect, control and regulate the use of Hawaii’s water resources for the benefit of its people.”⁴⁶⁷ Water for irrigation is a necessity for any agricultural-based industry and irrigated agriculture accounts for the bulk of surface and groundwater consumption in the United States.⁴⁶⁸ Water for irrigation must first be suitable for use on cannabis crops to avoid the introduction of elemental, microbial, and chemical contaminants.⁴⁶⁹ Then water must be efficiently delivered to plants to limit wastage.⁴⁷⁰ And finally, in indoor cultivation facilities, opportunities to reclaim and recycle irrigation effluent and condensate expired by the growing plants should be considered.⁴⁷¹ Given Hawaii’s long history with water rights issues, strong consideration should be given to ensure the effective management of water resources by the industry. Requirements implemented in other states include automated watering systems that allow for no more than 20% water runoff and filtration and reuse of wastewater.

Land Use

“Proper land-use planning is the foundation upon which sustainable practices are built.”⁴⁷² According to the State of Hawaii Office of Planning and Sustainable Development, Land Use Division, all land in the State is designated as either urban, rural, agricultural, or conservation, with 47% of the land in Hawaii designated as agricultural. While the land use impact of cannabis cultivation is typically much lower than traditional agriculture, attention should be given to proper land use management to ensure the long-term health of the land and soil. Agricultural runoff can contain pesticides, heavy metals, nutrients, and other pollutants. Regulating cultivation sites for use of fertilizers, herbicides, and insecticides can help to minimize these contributions to nonpoint source pollution of coastal and groundwater. Additionally, cannabis and hemp have the capacity to remove pesticides and heavy metal contamination from soil. However, it should be cautioned that cannabis and hemp will store these in the plant material which may become concentrated in manufactured products. Therefore, cannabis grown for remediation, or in potentially contaminated soils should *never* be used for human consumption. Finally, an important consideration in the siting of cannabis and hemp cultivation operations is the potential for cross-pollination between the two crops which has already resulted in lawsuits in other states.

Waste Management

The cannabis industry generates three categories of waste: plant waste, consumer packaging, and universal and hazardous waste. A high volume of unusable plant waste is to be expected from cannabis. Due to diversion concerns, most states, including Hawaii, require cannabis waste to be rendered “unusable and unrecognizable” by grinding and mixing 50/50 with non-cannabis waste before disposal. To minimize the volume of resulting plant waste, some states have moved to allow low-THC plant components (stalks, stems, fan leaves, and rootballs) to bypass the 50/50 mixing requirement. In addition to off-site landfill or certified composter disposal, on-site composting and Bokashi fermentation are increasingly practiced as environmentally sustainable disposal methods. Universal and hazardous waste includes spent solvents, solvent-soaked plant material, pesticides, growth media, mercury-containing light fixtures and ballasts, batteries, and other electronic waste. Minimizing universal and hazardous waste is best managed by source-reduction and substitution, e.g., using LEDs instead of mercury-containing fixtures. As with most other industries, consumer packaging represents a significant downstream waste source. Even if made of recyclable material, the shape and size of cannabis packaging is not conducive to consumer recycling. The use of child-resistant primary packaging helps to eliminate the need for an additional exit package. In addition to compostable or biodegradable packaging materials, incentivized take-back programs are a sustainable option.

Air Quality

Direct air quality impacts from the cannabis industry include plant emissions and solvent use during extraction procedures. Cannabis plants naturally emit terpenes, a form of volatile organic compounds (VOCs) and sulfur-containing compounds called thiols as they grow.⁴⁷³ Although these compounds are not unique to cannabis, they occur naturally in many other types of plants and trees, it is the combination of these compounds that give cannabis plants its characteristic smell. Manufactured products such as concentrates, edibles, lotions, and tinctures are produced via solvent-based or solvent-less methods. Solvent-less methods involve the use of physical agitation or heat and pressure, whereas solvent-based processes employ solvents to remove the terpenes and cannabinoids from plant material. Common solvents used in the cannabis industry include propane, butane, ethanol, and isopropyl alcohol. Even in closed-loop systems, up to 20-30% of solvents may be lost to air emissions. Particulates from mechanical extraction and evaporation from solvent-based extraction can adversely impact ambient air quality which is an occupational safety hazard in addition to an environmental concern. Carbon filtration is the best technology for reducing VOC emissions and

odors in indoor cultivation facilities but is not feasible in greenhouses because they cannot be sealed. A recommended practice to control emissions from solvent extractions is to require mass balance calculations to determine the extent of air emissions.⁴⁷⁴

Nuisance Odors

Cannabis cultivation produces strong odors that can pose a nuisance to surrounding communities, cause complaints from the public, and impact the quality of life. As described in the section on Air Quality, these odors are the result of VOCs emitted from the plant and anyone who has spent time in proximity to cannabis plants can attest that cannabis terpenes are “sticky,” and cannabis odors tend to persist. In addition to second-hand cannabis smoke complaints, the Department of Health regularly receives complaints regarding cannabis plant odors coming from a neighbor’s yard. Plant odor complaints can also trigger law enforcement inquiries into medical patient home grows. Due to the subjective nature of quantifying and classifying odor, odor is very difficult to regulate, and most complaints do not result in a violation, but public concerns still need to be addressed. Although not intoxicating or a threat to human health or the environment, cannabis odor can interfere with a person’s comfortable enjoyment of life and property. The best technology for odor control in indoor facilities is carbon filtration. Ozone generators are also effective, but ozone is toxic to human health and the environment. The best available option for greenhouses and outdoor cultivations are chemical masking or neutralizing agents which attempt to cover up the odor by releasing a stronger or complementary smell. Implementing a plan to reduce odors can help to reduce community complaints and build better relationships with those living near a cultivation facility.

A Final Word

Regulating medical use in Hawaii has been and continues to be a significant public health and safety challenge. Expansion to a dual use system that allows for adult-use, while continuing to protect medical use, will be an extremely complex undertaking, requiring the collaboration and coordination of multiple governmental agencies, the industry, and the public. While it makes sense to learn from experiences of those who legalized before us and the lessons learned from regulating other substances that impact the public's health and safety, *"it would be unwise to assume that the modest effects of cannabis legalization observed to date will predict its longer term effects."*⁴⁷⁵ Since cannabis remains federally illegal, the full effects of commercialization remain unknown and the resulting impacts on public health will not be realized for some time. The Precautionary Principle should apply to all aspects of legalization.

William Tilburg, Executive Director, Maryland Medical Cannabis Commission commenting on the larger public health challenges currently facing states that have legalized cannabis for medical or adult-use.

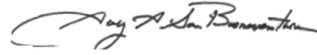
"I want to highlight (...) the regulatory challenge of balancing health and safety measures and market forces. There is a misconception that cannabis legalization is starting something new. This isn't really true because there is a healthy illicit market. The illicit market involves products that are not subjected to safety standards and is often associated with criminal activity. When legalizing cannabis, part of a state's rationale is to increase product safety with reassures like safety standards, testing, and labeling. However, a parallel goal is to decrease the market share of the illicit trade in cannabis. Now if the regulatory burden created by the health and safety measures is too great, it creates an increase in operating costs that is passed on to the consumers. If this results in a product that is not competitively priced, people will remain or return to the illicit market. So, there is a real challenge to regulate in a way that balances the need for health and safety regulations, while being conscious of the need to be price competitive with the illicit market."

SIGNATURES

Respectfully submitted by the Public Health and Safety Working Group this
26th day of September 2022.



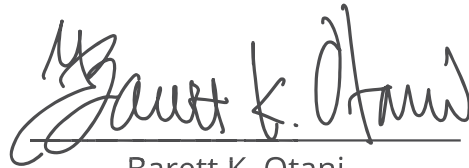
Michele N. Nakata, Chair



Senator Joy A. San Buenaventura



James H. Ireland, M.D.



Barrett K. Otani



Randy A. Gonce



Jared K. Redulla

Appendices

Appendix 1. Key Points – June 27, 2022

06.27.2022 Public Health and Safety Working Group Key Points

- Look into Department of Health public information campaign percentage.
 - Link to DOH Media Campaign: [Communications – Chronic Disease Prevention & Health Promotion Division | Media Campaigns \(hawaii.gov\)](#)
- Michelle Nakata will talk to DCCA regarding cryptocurrency for the limited purpose of cannabis transactions.
- Jared Redulla: DPS will look into what works in other states for cryptocurrency in banking and how they can track/ the traffic of cryptocurrency
- Members will provide ideas on the banking problems so as to prepare for the liberalization of the current laws when it comes to cannabis

List below are potential solutions from individuals who provided written/verbal testimony:

- **Potential Solutions:** one working group that could look into what options are available in the state to avoid this conflict with DEA
 - Look into our use of Medical Cannabis Act
 - Iowa and Minnesota addressed this issue to DEA with a letter.
 - The DEA denied the petition to exempt Iowa's medical marijuana program from the Controlled Substances Act in 2020.
- **Potential Solutions:** a complete reassessment of the current medical cannabis program specifically addressing improvements in access to appropriately educated providers, specialized in product categories, and increasing the qualifying condition list with the goal of expanding and supporting current and future patient populations.
- **Potential solutions:** Unintended consequences working group: to identify and make recommendations on the negative consequences that patients and end users face when they must violate federal law to participate in the state authorized use of cannabis, to include the steps the State can take to prevent such consequences.
- **Potential solutions:** Communities harmed by the disparate racial impact of the war on drugs generally, not just "cannabis criminalization" because the cannabis laws were the tip of the spear for prosecuting that larger policy racist at both the state and federal levels that flowed massive militarization police funding into Hawaii for decades. Driving cannabis cultivation deep

underground resulted in the shift to other illegal drugs to fund demonetized communities struggling for lack of educational and economic opportunities. That meant ice. The uptick of ice addiction and trafficking is a direct result of Green Harvest and other "cannabis criminalization" which then lead to further public health devastation, disproportionate mass incarceration for other drug crimes, and an environment of violence and lawlessness in low income neighborhoods, often predominantly Native Hawaiian. Social equity must include those considerations as well.

- B) As for continuity of medical access, a regulatory recommendation to continue home grows, caregivers, and coops must be specifically included in this report- as directed by the Legislature in HB2260 as enacted.
- C) The role of the hemp licensees in the future of "dual use" legalization must be considered, and specifically as to including automatic cannabis cultivation licensing as was done in the New York State social equity program.
- D) The emerging social equity program in San Diego County in California must be considered.
- E) The reasonable policy of expanding and diversifying the medical supply chain to immediately include home grown, caregiver grown, and coop grown surplus medicine must be immediately considered as a stepping stone to a future dual use regime.
- F) The possibility that patients are best served by a robust unified lightly-regulated market must be considered as an alternative to so-called "dual use."

Appendix 2. Drug Interaction Table

Drug interaction table						
<p>The Retail Marijuana Public Health Advisory Committee (RMPHAC) developed the following table to list the potential drug interactions with marijuana based on what has been documented in the peer-reviewed literature. However, the RMPHAC acknowledges this list as not comprehensive of all potential drug interactions. It is advised that individuals consult with their doctor regarding the potential for drug interactions prescribed medications may have with marijuana.</p>						
Potential Drug Interactions with Marijuana						
Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Chlorpromazine	Marijuana smoking increased clearance of chlorpromazine, as did tobacco smoking	No				Possible
Clobazam	In subjects taking cannabidiol (CBD), mean clobazam levels were about 60- 80% higher, and nCLB levels 300-500% higher. A decrease in the clobazam dose was required in subjects taking CBD.	No		Yes	Possible	

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Clozapine	Possible increased clozapine metabolism by marijuana induction of CYP1A2 (similar to tobacco). Therefore cessation may lead to increased clozapine levels and toxicity. Single case report of clozapine toxicity after tobacco and marijuana cessation.	No			Possible	Possible
CNS depressants	Additive drowsiness and CNS depression Includes: alcohol, opioids, sedative hypnotics, barbiturates, benzodiazepine, buspirone, antihistamines, muscles relaxants, and many more.	No		Yes		

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Disulfiram	Possible hypomanic/psychotic reaction.	No	Possible			
Fluoxetine	No change in fluoxetine efficacy and no serious adverse reactions in a 12 week clinical study of fluoxetine vs. placebo for marijuana-related depression.	No				

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Hexobarbital	May enhance CNS depressant effect. CBD decreased metabolism of hexobarbital but did not change its clinical effects.	No		Yes	Possible	
Hydrocortisone	THC increased serum cortisol, but effect is blunted in frequent users. Theoretical possibility of cushingoid syndrome.	No			Possible	

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Hexobarbital	May enhance CNS depressant effect. CBD decreased metabolism of hexobarbital but did not change its clinical effects.	No		Yes	Possible	
Hydrocortisone	THC increased serum cortisol, but effect is blunted in frequent users. Theoretical possibility of cushingoid syndrome.	No			Possible	

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Ketoconazole	Peak THC concentration was increased by 27%.	No	Possible	Possible		
MAO Inhibitors	Possible enhancement of orthostatic hypotension.	No				

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Phenytoin	May enhance CNS depressant effect. In vitro, decreased phenytoin levels due to induction of metabolism by THC. Therefore, phenytoin levels may rise rapidly after THC cessation, causing toxicity. Intermittent THC use may cause transient subtherapeutic phenytoin levels. Case report of phenytoin toxicity after recreational use of phenytoin concomitantly with EtOH and marijuana.	No		Yes	Possible	Possible
Protease inhibitors	Statistically significant decrease in peak concentration of indinavir and nelfinavir with THC use.	No				Possible

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Theophylline	<p>Smoked marijuana lowers theophylline concentrations, similar to tobacco.</p> <p>Unclear if only a smoking-related effect. No studies of oral marijuana/THC.</p>	No				Possible
Tricyclic antidepressants	<p>May cause transient cognitive changes, delirium, or tachycardia.</p>	No	Possible		Possible	

Concomitant Drug/Drug Class	Description of Interaction	Contra-indicated	Increased THC Effect	Increased CNS Depressant	Increased Concomitant Drug Effect	Decreased Concomitant Drug Effect
Warfarin	Possible enhanced anticoagulant effect.	No			Possible	

Appendix 3. Health & Safety Impacts

CANCER		
SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Testicular Cancer	MODERATE evidence that cannabis use among adult males is associated with an increased risk of non-seminoma testicular cancer	NASEM; RMPHAC
Pre-Cancerous Lesions	SUBSTANTIAL evidence that daily or near-daily cannabis smoking is associated with pre-malignant lesions in the airway	RMPHAC
Prostate Cancer	LIMITED evidence that cannabis use among adult males is associated with an increased risk of prostate cancer	RMPHAC
CARDIOMETABOLIC RISK		
SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Heart Attack	LIMITED evidence that acute cannabis use increases the risk of myocardial infarction	NASEM; RMPHAC
Stroke	MODERATE evidence that cannabis use increases risk of ischemic stroke in individuals younger than 55 years of age	NASEM; RMPHAC
Diabetes	LIMITED evidence of a statistical association between cannabis use and increased risk of prediabetes	NASEM
RESPIRATORY HEALTH		
SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
COPD	LIMITED evidence that occasional cannabis smoking is associated with an increased risk of developing chronic obstructive pulmonary disease (COPD) when controlled for tobacco use	NASEM
Cannabis Smoke	SUBSTANTIAL evidence that cannabis smoke, both mainstream and sidestream, contains many of the same cancer-causing chemicals as tobacco smoke	RMPHAC
Collapsed Lung	LIMITED evidence that daily or near-daily cannabis smoking is associated with bullous lung disease leading to pneumothorax in individuals younger than 40 years of age	RMPHAC
Bronchitis	SUBSTANTIAL evidence that heavy cannabis smoking is associated with chronic bronchitis, including chronic cough, sputum production, and wheezing	NASEM
Particulates in Smoked Cannabis	LIMITED evidence that smoking cannabis deposits more particulate matter per puff in the lungs compared to tobacco smoke	RMPHAC
Water Pipes	LIMITED evidence from simulated smoking studies that smoke from water pipes or bongs contains more cancer-causing chemicals per milligram of THC compared to smoke from unfiltered joints	RMPHAC
PRENATAL, PERINATAL, AND NEONATAL EXPOSURE		
SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Academic Ability	MODERATE evidence that maternal cannabis use during pregnancy is associated with decreased academic ability of exposed offspring	RMPHAC
Attention Problems	MODERATE evidence that maternal use of cannabis during pregnancy is associated with attention problems in exposed offspring	RMPHAC
Behavior Problems	LIMITED evidence that maternal cannabis use during pregnancy is associated with behavior problems in exposed offspring	RMPHAC

Cannabis Use	LIMITED evidence that maternal cannabis use during pregnancy is associated with initiation of cannabis use by exposed offspring during adolescence or young adulthood	RMPHAC
Cognitive Function	MODERATE evidence that maternal use of cannabis during pregnancy is associated with reduced cognitive function in exposed offspring	RMPHAC
Decreased Growth	LIMITED evidence that maternal use of cannabis during pregnancy is associated with decreased growth in exposed offspring	RMPHAC
Depression	LIMITED evidence that maternal use of cannabis during pregnancy is associated with increased depression symptoms in exposed offspring	RMPHAC
Heart Defects	LIMITED evidence that maternal use of cannabis during pregnancy is associated with isolated, simple ventricular septal defects (heart defects)	RMPHAC
IQ	MODERATE evidence that maternal use of cannabis during pregnancy is associated with decreased IQ scores in exposed offspring	RMPHAC
Infant Metabolism of THC in Breastmilk	BIOLOGICAL evidence shows that infants who drink breast milk containing THC absorb and metabolize the THC	RMPHAC
Low Birthweight	SUBSTANTIAL evidence of association between maternal cannabis smoking and lower birth weight of offspring	NASEM
Passage of THC From Mother to Fetus	BIOLOGICAL evidence shows that THC is passed through the placenta of women who use cannabis during pregnancy and that the fetus absorbs and metabolize the THC and passes THC metabolites in the meconium	RMPHAC
Persistence of THC in Breastmilk	BIOLOGICAL evidence shows that THC is present in the breast milk of women who use cannabis and may persist for several weeks after reported last use	RMPHAC
Pregnancy Complications	LIMITED evidence of association between maternal cannabis smoking and pregnancy complications for the mother	NASEM
Small for Gestational Age	MODERATE evidence that maternal use of cannabis during pregnancy is associated with infants being born small for gestational age (birth weight less than 10th percentile for gestational age)	RMPHAC
Stillbirth	LIMITED evidence that maternal use of cannabis during pregnancy is associated with an increased risk of stillbirth	RMPHAC

INJURY

SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Blood THC and Impairment	SUBSTANTIAL evidence that there is meaningful driving impairment in cannabis users who use less-than-weekly and/or with a whole blood THC of 2-5 ng/mL	RMPHAC
Blood THC in Impaired Drivers	MODERATE evidence that blood THC levels of cannabis-impaired drivers are higher now than in the past	RMPHAC
Cannabis and Alcohol Use	SUBSTANTIAL evidence that the combined use of cannabis and alcohol increases impairment and motor vehicle crash risk more than use of either substance alone	RMPHAC
Driving Impairment – Ingestion (edibles)	SUBSTANTIAL evidence that for cannabis users who use less-than-weekly, orally ingesting 10 mg or more of THC is likely to meaningfully impair driving ability	RMPHAC
Driving Impairment – Smoking	SUBSTANTIAL evidence that for cannabis users who use less-than-weekly, smoking more than about 10 mg THC (part of a joint) is likely to meaningfully impair driving ability	RMPHAC

Motor Vehicle Crash Risk	SUBSTANTIAL evidence that recent cannabis use by a driver increases their risk of motor vehicle crash	NASEM; RMPHAC
Motor Vehicle Crash Risk – Blood THC Level	MODERATE evidence of a positive association between THC blood level and motor vehicle crash risk	RMPHAC
Unintentional Exposures - Children	SUBSTANTIAL evidence that more unintentional cannabis exposures of children occur in states with increased legal access to cannabis; and the exposures can lead to significant clinical effects requiring medical attention	NASEM; RMPHAC

PSYCHOSOCIAL EFFECTS

SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Academic Impacts	MODERATE evidence that adolescents and young adults who use cannabis weekly or more frequently are more likely than non-users to have ongoing impairment of cognitive and academic abilities for at least 28 days after last use	RMPHAC
Academic Impacts – College Completion	MODERATE evidence that adolescents and young adults who use cannabis weekly or more frequently are less likely than non-users to attain a college degree	NASEM; RMPHAC
Academic Impacts – High School Graduation	SUBSTANTIAL evidence that adolescents who use cannabis weekly or more frequently are less likely than non-users to graduate from high school	NASEM; RMPHAC
Cognitive Impacts	MODERATE evidence of association between acute cannabis use and impairment in learning, memory, and attention	NASEM
Decision-Making	LIMITED evidence that adults who use cannabis weekly are more likely than non-users to have impaired decision-making lasting up to two days after last use	RMPHAC
Executive Functioning	LIMITED evidence that adults who use cannabis are more likely than non-users to have impaired executive functioning, after not using for a short time	RMPHAC
Memory Impairment	SUBSTANTIAL evidence that adults who use cannabis daily or near-daily are more likely than non-users to have memory impairments for at least seven days after last use	RMPHAC

MENTAL HEALTH

SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Anxiety	LIMITED evidence of association between near daily cannabis use and increased symptoms of anxiety	NASEM
Anxiety Disorders	LIMITED evidence of association between cannabis use and the development of any type of anxiety disorder; except social anxiety disorder	NASEM
Anxiety Disorders – Social Anxiety Disorder	MODERATE evidence of association between regular cannabis use and increased incidence of social anxiety disorder	NASEM
Bipolar Disorder	LIMITED evidence of association between cannabis use and the likelihood of developing bipolar disorder, particularly among regular or daily users	NASEM
Bipolar Disorder – Mania & Hypomania	MODERATE evidence of association between regular cannabis use and increased symptoms of mania and hypomania in individuals diagnosed with bipolar disorders	NASEM
Depression	LIMITED evidence that adolescent and young adult cannabis users are more likely than non-users to have future symptoms or a diagnosis of depression in adulthood	RMPHAC

Depressive Disorders	MODERATE evidence of association between cannabis use and a small increased risk for development of depressive disorders	NASEM
High THC Use	MODERATE evidence that adolescent and young adults who use cannabis with higher THC concentration (>10% THC) are more likely than non-users to develop future mental health symptoms and disorders.	RMPHAC
Psychotic Disorders – Adolescents & Young Adults	SUBSTANTIAL evidence that adolescents and young adults who use cannabis daily or near-daily are more likely than non-users to develop future psychotic disorders like schizophrenia in adulthood	RMPHAC
Psychotic Disorders - Adults	SUBSTANTIAL evidence that adults who use cannabis daily or near-daily are more likely than non-users to be diagnosed with a psychotic disorder, such as schizophrenia.	RMPHAC
Psychotic Disorders – High THC	MODERATE evidence that individuals who use cannabis with THC concentration >10% THC are more likely than non-users to be diagnosed with a psychotic disorder, such as schizophrenia	RMPHAC
Psychotic Disorders – Schizophrenia	LIMITED evidence of association between cannabis use and symptoms of schizophrenia among individuals with psychotic disorders	NASEM
Psychotic Symptoms	SUBSTANTIAL evidence that THC intoxication can cause acute psychotic symptoms, which are worse with higher doses	RMPHAC
Psychotic Symptoms – Adolescents & Young Adults	SUBSTANTIAL evidence that adolescents and young adults who use cannabis are more likely than non-users to develop future psychotic symptoms, and this likelihood increases with more frequent use.	RMPHAC
PTSD	LIMITED evidence of association between cannabis use and increased severity of posttraumatic stress disorder symptoms among individuals with posttraumatic stress disorder	NASEM
Suicide – Adolescents & Young Adults	MODERATE evidence that adolescents and young adults who use cannabis are more likely than non-users to have suicidal thoughts or attempt suicide	RMPHAC
Suicide – Heavy Use	MODERATE evidence of association between cannabis use and increased incidence of suicidal ideation and suicide attempts, with a higher incidence among heavier users	NASEM
Suicide – Suicide Completion	MODERATE evidence of association between cannabis use and increased incidence of suicide completion	NASEM

PROBLEM CANNABIS USE

SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Cannabis Use Disorder	SUBSTANTIAL evidence that cannabis users can develop cannabis use disorder, including adolescent and young adult users	RMPHAC
Cannabis Use Frequency	SUBSTANTIAL evidence of association between increases in cannabis use frequency and progression to developing cannabis use disorder	NASEM
Childhood Anxiety & Depression	LIMITED evidence that childhood anxiety and childhood depression are risk factors for developing cannabis use disorder	NASEM
Concentrate Use	LIMITED evidence that individuals who use THC concentrates are more likely to report symptoms of cannabis use disorder than those who use only non-concentrate cannabis products	RMPHAC

Future Alcohol Use Disorder	MODERATE evidence that adolescent and young adult cannabis users are more likely than non-users to use alcohol or have alcohol use disorder in adulthood	RMPHAC
Future Cannabis Use Disorder	SUBSTANTIAL evidence that adolescent and young adult cannabis users are more likely than non-users to increase their use and to develop cannabis use disorder in adulthood	NASEM; RMPHAC
Future Substance Use Disorder	SUBSTANTIAL evidence that adolescent and young adult cannabis users are more likely than non-users to use or have a substance use disorder for other drugs in adulthood	RMPHAC
Future Tobacco Use	SUBSTANTIAL evidence that adolescent and young adult cannabis users are more likely than non-users to use tobacco or have tobacco use disorder in adulthood	RMPHAC
High THC – Adolescents & Young Adults	MODERATE evidence that adolescents and young adults who use cannabis with higher THC concentration (>10% THC) are more likely than non-users to continue use	RMPHAC
Major Depressive Disorder	MODERATE evidence that major depressive disorder is a risk factor for the development of cannabis use disorder	NASEM
PTSD	MODERATE evidence of association between cannabis use disorder and increased severity of posttraumatic stress disorder symptoms	NASEM
Withdrawal Symptoms	SUBSTANTIAL evidence that individuals who use cannabis daily or near-daily can experience withdrawal symptoms when abstaining from cannabis	RMPHAC
OTHER IMPACTS & FINDINGS		
SUBTOPIC	EVIDENCE STATEMENT	REFERENCES
Blood THC – Concentrates	LIMITED evidence that inhaling THC concentrates yields higher blood levels of active and later inactive THC, when compared to smoking cannabis flower	RMPHAC
Blood THC – Delayed with Ingestion	SUBSTANTIAL evidence that it takes up to 4 hours after ingesting cannabis to reach peak blood THC concentrations	RMPHAC
Blood THC – Ingestion	MODERATE evidence that ingesting more than about 15 mg THC can yield a whole blood THC concentration > 5 ng/mL	RMPHAC
Blood THC - Smoking	SUBSTANTIAL evidence that inhaling more than about 10mg THC (part of a joint) is likely to yield whole blood THC concentrations near or above 5 ng/mL within 10 minutes	RMPHAC
Blood THC – Vaping	MODERATE evidence that inhaling vaporized cannabis yields blood THC levels analogous to those produced by smoking the same dose	RMPHAC
Cyclic Vomiting	MODERATE evidence that long-time, daily or near-daily cannabis use is associated with severe recurrent vomiting (cannabinoid hyperemesis syndrome)	RMPHAC
Secondhand Smoke – Impairment	LIMITED evidence that individuals passively exposed to cannabis smoke under extreme passive exposure conditions (e.g., spending one hour in an unventilated space with individuals smoking cannabis of 11% potency) experience psychomotor impairment and increased heart rate in the hour immediately following exposure	RMPHAC
Wait Time Before Driving - Ingestion	SUBSTANTIAL evidence that delaying driving at least 8 hours after oral ingestion of less than 18 mg THC allows THC-induced impairment to resolve or nearly resolve for users who use less-than-weekly	RMPHAC

Wait Time Before Driving – Smoking (35 mg THC)	MODERATE evidence that delaying driving at least 6 hours after smoking about 35 mg THC allows THC-induced impairment to resolve or nearly resolve for users who use less-than-weekly	RMPHAC
Wait Time Before Driving – Smoking (<18 mg THC)	SUBSTANTIAL evidence that delaying driving for at least 6 hours after smoking less than 18 mg THC allows THC-induced impairment to resolve or nearly resolve for users who use less-than-weekly	RMPHAC

NASEM = National Academies of Sciences, Engineering, and Medicine

RMPHAC = Colorado Department of Health and the Environment, Retail Marijuana Public Health Advisory Committee

Appendix 4. State Attorneys General Support Protecting Children from Cannabis



June 22, 2022

The Honorable Nancy Pelosi, Speaker
House of Representatives
1236 Longworth House Office Building
Washington, D.C., 20515

The Honorable Kevin McCarthy, Minority Leader
House of Representatives
2468 Rayburn House Office Building
Washington, D.C., 20515

The Honorable Chuck Schumer
322 Hart Senate Office Building
Washington, D.C., 20510

The Honorable Mitch McConnell
317 Russell Senate Office Building
Washington, D.C., 20510

Re: State Attorneys General Support Protecting Children from Cannabis

Dear Speaker Pelosi, Majority Leader Schumer, Minority Leader McCarthy, Minority Leader McConnell:

As the chief legal officers of our respective states, we the undersigned Attorneys General are gravely concerned about the dangers of copycat tetrahydrocannabinol (THC) edibles in our communities, particularly the risk they pose to our children. As contemplated by our federalist Constitution, the States have taken a wide variety of approaches to the regulation of cannabis and THC. The undersigned Attorneys General do not all agree on the best regulatory scheme for cannabis and THC generally, but we all agree on one thing: copycat THC edibles pose a grave risk to the health, safety, and welfare of our children. Congress should immediately enact legislation authorizing trademark holders of well-known and trusted consumer packaged goods to hold accountable those malicious actors who are using those marks to market illicit copycat THC edibles to children.

Individuals and businesses unlicensed by any state to enter the cannabis market, are making THC-infused edible products to mimic major snack brands that are popular with children—including Oreos cookies, Doritos chips, and Cheetos corn snacks. The products are widely-available.



As the examples reproduced above demonstrate, these dangerous products are designed to mimic well-established brands so closely that only a perspicacious adult could readily distinguish the THC copycats from the authentic brands. And that is quite intentional. Illicit operators use food-related trademarks popular with children in order to market their THC products to children. These copycats are often infused with levels of THC dramatically exceeding legal limits under state laws. The threat these THC edibles pose to the health and safety of our children is not limited to any particular State; it is nationwide and growing rapidly.

For example, on March 2, 2022, three Virginia parents took their children to the hospital for treatment after they observed lethargic behavior and discovered they had consumed THC-laden Goldfish crackers from their childcare facility. Similarly, two individuals in Oklahoma were recently hospitalized after unknowingly consuming THC-laced chips. In South Carolina in the fall of 2021, an elementary teacher inadvertently distributed to their students THC-infused candies designed to mimic the popular “Sour Patch Kids” brand. In Elkhart, Indiana, on August 3, 2021, a toddler was hospitalized after accidentally ingesting a bag of “Cheetohs” laced with more than 600mg of THC. In December 2020 a three-year-old was admitted to the ICU after consuming a copy-cat Nerds Rope, like the one pictured above.

In the first half of 2021, the American Association of Poison Control Centers reported poison control centers received over 2,622 calls for services related to young children ingesting cannabis products. This is a growing problem with no resolution in sight. In response during the fall of 2021, a bipartisan cohort of State Attorneys General issued advisory warnings to consumers within their respective jurisdictions to avoid purchasing illegal and counterfeited cannabis edibles.¹

¹ State Attorneys General from [Alaska](#), [Arkansas](#), [California](#), [Connecticut](#), [Illinois](#), and [New York](#), issued Consumer Advisory Warnings in October and November 2021.

Similarly, the federal Food and Drug Administration reported 2,362 THC exposure cases from January 1, 2021, through February 28, 2022. Of those reported exposures, 41% of involved pediatric patients. While individual States have tried to rein in these cannabis counterfeits, the States alone cannot curb this growing threat to public safety.

The deceptive tactic of copying well-known packages and selling these products through e-commerce platforms is dangerous and illegal. The above images and other evidence² reveals that these counterfeit THC edibles lack commonly accepted packaging protocols, advertise THC levels far in excess (in some instances many times over the applicable lawful limit), and are marketed directly to children. On the other hand, cannabis edible products manufactured and sold in compliance with state law are prohibited from packaging and advertising in a manner that would entice youth consumption, employ child-resistant packaging, and limit total THC content.

Consumer-packaged goods manufacturers currently lack the legal tools to hold accountable counterfeiters or the ecommerce platforms where these products are made available. The patchwork system of legality concerning cannabis' legal status under federal and state law exacerbates the confusions for consumers. More can be done to address this problem.

We respect the role the private sector can play in protecting consumers from the dangers presented by counterfeited products. A fundamental purpose of the federal trademark laws is to protect consumers from fraudulent goods through trademark registration and enforcement. State Attorneys General and federal authorities have a long-standing and cooperative role in protecting consumers.

As Congress continues its work, we urge congressional leadership to think creatively for potential solutions to this growing public safety issue of counterfeit, unlicensed, unregulated, and untested THC edibles.

At your request, we are available to directly discuss the impact these illicit THC edible products are having on our communities and potential solutions to address the problem.

Thank you for your consideration.

Sincerely,



Jason S. Miyares
Virginia Attorney General

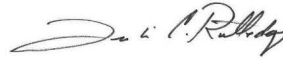


Aaron D. Ford
Nevada Attorney General

²<https://www.nyu.edu/about/news-publications/news/2022/april/copycat-cannabis-edible-study.html>;
<https://www.washingtonpost.com/business/2022/04/29/thc-in-fused-copycat-foods/>



Treg R. Taylor
Alaska Attorney General



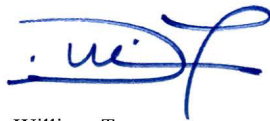
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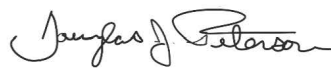
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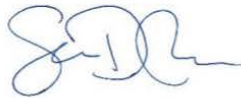
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Joshua R. Diamond
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Robert W. Ferguson
Washington Attorney General

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