The City of Calgary Council Committee: Response to SPC on CPS2018-0367
April 3rd 2018

Your Worship and Council Members, thank you for allowing me to speak today. My name is Amberlyn Aguilar, A-G-U-I-L-A-R, and as a concerned citizen, I would like to raise 3 issues regarding the proposed ban on the public consumption of cannabis.

As someone who has purchased cannabis medicinally in order to treat ongoing anxiety and depression, I can imagine myself at a social event, nervous and nauseated, for no particular reason other than the fact that there are more people in the room. I excuse myself and step outside to smoke cannabis because I know that this plant does wonders for me, increasing the presence of naturally-occurring brain chemicals called endocannabinoids, which helps to regulate immune function, the digestive system, and mood, to name just a few. In fact, proved in a 2014 study done by Vanderbilt University, the reduction of endocannabinoids, these natural chemicals that our body already creates, could be a major cause of anxiety disorder[1].

My first issue is that instantly, under this proposed ban, I am regarded as a criminal until I can prove otherwise. Attempting to medicate myself peacefully in order to attend a social event now invites scrutiny and stigmatization from onlookers. It also invites harassment from a police officer, where I must provide a receipt of my medical cannabis in order to prove to that I am not a criminal.
What if I forgot my receipt that day, what if instead, I am shamed in public from smoking cannabis, inconvenienced by an authority figure, given a penalty, and embarrassed in front of the people at the event I'm trying to make friends at. With someone who has anxiety, that very encounter would cause me to go home and never leave my house to attend a social event again.

Now imagine witnessing the very scenario I just described, as an onlooker who has no experience or knowledge about cannabis. My second issue is that this ban would further encourage stigmatization and would present cannabis as an illicit and taboo drug that should never be seen unless behind closed doors. That mentality, that cannabis is a health problem used only by criminals, led to the failed prohibition stance on cannabis in the first place, and that this ban would perpetuate. If recreational cannabis is becoming legalized, why would we go backwards in our ideologies regarding what is right and wrong, what is lawful and not?

I also want to note that is it well known that many mood disorders, including anxiety, depression, or PTSD go undiagnosed. Science has proven that cannabis can help treat a variety of ailments, from severe arthritis and chronic pain, to migraines and stress. There are many recreational consumers that use cannabis because they know that it works with minor day-to-day issues, just like the people who know that they cannot start their day without coffee in the morning.
In that thought experiment, I am labelled and thought of as a criminal, and people who aren't well informed are dissuaded from seeking proper help or acknowledging that a natural substance can work for them, and instead could abuse prescription medication or turn to other drugs, such as opioids, tobacco, and alcohol.

Which brings me to my last point:
As stated in this proposal, the Government of Alberta indicated that their public consumption regulations are focused on the health effects of second-hand smoke, and additional rationale supplied in Attachment 5 indicates that in a survey Calgarians prefer cannabis usage rules to be like those for alcohol consumption.

We cannot address the consumption of cannabis as being similar to the rules of alcohol consumption because they do not pose the same health risks for the consumer. Alcohol, as we all know, has been proven to impair judgement, worsen mood disorders, and is listed as a Group 1 carcinogen by the International Agency for Research on Cancer.

When it comes to comparing cannabis and tobacco second-hand smoke, a study published in the US National Library of Medicine found that cannabis and tobacco smoke are not equally carcinogenic, and that the substance in tobacco, nicotine, promotes tumor growth and carcinogenic effects are amplified. In contrast, the substance in cannabis, cannabinoids such as THC or CBD, promote tumor regression and inhibits enzymes necessary to activate the carcinogens found in smoke[2]. Simply put, the health risks posed by cannabis second-hand smoke do not even come close to the higher and fatal risks of tobacco second-hand smoke.

The research shown in Attachment 5, two articles almost a decade old, suggests that both the compounds THC and CBD can cause hallucinations. An article, supported by Harvard Health Publishing, states that CBD has little, if any, intoxicating properties and patients report very little, if any, alteration in consciousness [4]. There are forms of cannabis, non-psychoactive strains, that pose almost no risk to the public, something you cannot say about alcohol or tobacco. In a recent 2017 study published in the Canadian Medical Association Journal, researchers concluded that "alignment of tobacco and marijuana smoking bylaws may result in the most effective public policies"[3].

To conclude, this proposed ban on cannabis would only help to reverse society's acceptance of cannabis, and further perpetuate the stigma that using cannabis is unlawful.

We don't need to scare people by using outdated research, avoiding the conversation on cannabis and following a deterrence strategy of justice. We need well-informed, educational, and frankly, unbiased policies founded on recent scientific research.

As someone who was born and raised in this city, a Canadian citizen, a female visible minority, and someone who suffers from depression and mood disorders, I do not need another reason to be harassed by authority figures or discriminated against publicly because I choose to alleviate my pain in the least harmful way possible. This ban would be detrimental to my dignity, placing me in the same category as criminals, rather than a good, rational, human being who finds relief in cannabis, just like many medicinal and recreational consumers do too. My autonomy of using this plant in order to live my life without pain and isolation should overrule the implementation of a policy that is merely convenient at this time.

Your Worship, Council members, I ask you to please consider your position on this issue and how it represents those in your communities. Let's not just choose what is convenient; let's progress Calgary as an accepting and tolerant city that allows their citizens to make informed, rational decisions with unbiased and educational resources, rather than making that decision for them. Let's consider the legalization of cannabis, as something that can benefit so many people and is continuing to keep many people alive in this city, without the stigma. Thank you.

1 https://news.vanderbilt.edu/2014/03/06/discovery-sheds-new-light-on-marijuana-anxiety-relief-effects/

2 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1277837/

3 http://cmajopen.ca/content/5/4/E814.full

4 https://www.health.harvard.edu/blog/medical-marijuana-2018011513085

RESPONSE TO CANNABIS CONSUMPTION Bylaws April 3rd 2018

Larry Heather jerusalem1@shaw.ca

We gather here together to preside over the precision crafting of bylaws related to the mass intoxification of the populace. We remember back to the days of Professor Timothy Leary and Alan Watts, who foresaw the rise of religious and mystical movements based on the intoxication of LSD. Certain political philosophies benefit greatly from the stupefaction of the masses. Much ado is being made in sundry attachments, of barriers designed to ensure the appearance of public safety. But large gaps in the ability to enforce such legislation are quite apparent.

We would find similar difficulties in crafting by-laws for the recreational use of quicksand pits, or the tide pod consumption bylaw 66F(for foaming)2018.

Certainly, there is no greater exemplification of the effect of Cannabis on public life, that the daily feckless whirlwind attending our Prime Minister. So we face the challenges in responding to the attached federal legislation, presiding over the end stage decline of our culture. With drafting assistance from the appropriately named PMO Head, Gerald Butts.

With the recent appearance of the New Leaf Cannabis outlet between Starbucks and BoardWalk at Elbow and Southland, we have bud, between bitter coffee, and beefy burgers. It makes one think of the nearby Southland library and the effect on children that frequent there.

Surely, with all the emphasis on the wrong syllable, of assiduously protecting children from pot in public places and schools, but abandoning them to the cruel mercies of pot smoking parents within the very walls of their domiciles. Something has gone wacky. Great care and attendance is placed on the manufacture of our foods, but here we have the brain shrivelling certainty of damaging children at the youngest of ages.

The decision to be hands off, on the allowance of 4 pot plants per residence begs the question. What short time horizon users

want, is a fast growing period for the plants. This involves heat lamps and higher humidity. So where are the building code requirements on heat lamps and ventilation of mould producing, high humidity environments? Or the requests to the Province to implement such standards?

What about people trapped in apartments and condos who are subjected to pot smoke through the ventilation and heating systems of multi-dwelling buildings?

As far as the proposed set aside areas for cannabis smoking at public events, several untenable situations present themselves.

1. Bylaw officers being subject to drug intoxification themselves in the midst of determining bylaw infractions and the handing out of tickets. What provisions are being made for dangerous exposure on the job. Perhaps a tender request for a supplier of Darth Vader masks?

2. The impending arrival of event supervised drug injections sites now combined with pot smoking areas at summer events such as Chasing Haze. Perhaps the two areas could be separated by the strategic placement of the Coroner's tent?

3. Of course, drinking areas and smoking areas are two different beasts. There is no mention in the bylaw of maximum capacities of such set aside areas. As the intensity of the smoke increases, so the potent spillovers to the entire venue.

4. Left out of the equation is the dog eat dog nature of the cannabis industry. I would venture to say that 70% of the potential investors in this exploitive industry are going to lose their shirts in the first year of operations. The police force will be kept busy with the underground pushers, who will simply make their prices lower and their product mixed, to compete with the retail sector.

I trust you will consider these additional recommendations in these areas to mitigate the disaster effects of this craven and short-sighted legalization.

Presentation to the Standing Policy Committee on Community and Protective Services

April 3, 2018

ASH is Western Canada's leading tobacco control organization and we have contributed to the quality of life in Alberta and Calgary since 1979.

We applaud the efforts of the City of Calgary to consult broadly on cannabis legalization and to engage the health sector in these discussions.

We are very pleased with the decision to combine tobacco and cannabis and smoking and vaping in one general bylaw although we have some concerns with the present draft.

Tobacco is by far the most addictive and deadly form of drug abuse in Calgary and it should not take a back seat to the regulation of a less harmful substance. In fact, tobacco kills at least 47 times more Canadians than cannabis according to the best available estimates.

From a public health perspective, almost any measure that can be justified to regulate cannabis can also be justified to regulate tobacco.

ASH has several concerns regarding cannabis legalization including:

- The potential "renormalization" of smoking in public areas.
- The combined or joint use of cannabis and tobacco.
- The potential for cannabis regulations to exceed tobacco regulations.

Regarding "renormalizing" smoking, ASH is very concerned about the public use of cannabis and its potential to increase the social acceptability of smoking. Smoking bans are a cornerstone of the overall effort to reduce tobacco use. As this Council knows, Calgary's smoking ban was over 20 years in the making and it required a Herculean effort to achieve. We cannot allow cannabis legalization to threaten or impair this enormous public health achievement.

Regarding joint use, about one-third of all joints are rolled with tobacco to improve the buzz and the burn according to cannabis smokers. People who use cannabis in this manner risk tobacco addiction and the resulting health consequences. In fact, the health risks of tobacco generally outweigh those of cannabis.

Regarding the possible over-regulation of cannabis, tobacco should not be overlooked in any legitimate discussion about controlling legal drugs. Tobacco is responsible for more disease, disability and premature death than all drugs combined according to the Canadian Centre on Substance Abuse.

We need to ensure that laws to control cannabis are balanced against laws to control tobacco and that the principals of fairness, equity and proportionality apply. Simply stated, tobacco regulation should not take a back seat to cannabis regulation.

Based on these concerns, we are urging City Council to extend its current restrictions on tobacco smoking and vaping to include all public recreation spaces that are accessible to children and youth. Specifically, we are calling for a ban on tobacco smoking and vaping in all parks and at all outdoor public events. This measure will ensure that restrictions on tobacco use are more aligned with the proposed restrictions on cannabis use. It will also send a strong and consistent message to young people about the dangers of smoking and vaping any drug.

To a five-year-old, smoking is smoking whether it involves cannabis, e-cigarettes, cigars or combustible cigarettes. Modelling is an essential component of childhood development and we need to model healthy behaviours if we want to raise healthy kids. For these reasons, the smoking and vaping of any substance should be prohibited in public areas that are frequented by children including parks and public events.

Calgarians are ready to support further restrictions on smoking in public. A 2016 poll of 400 Calgarians conducted by Ipsos Reid revealed that 88 percent of respondents supported a complete smoking ban in all outdoor public places frequented by youth.

City Council has amended the smoking bylaw several times since it was first approved in 1985. It's time to declare Calgary a "smoke-free city" and to make improving the health of our children and youth a top civic priority.

We are also urging City Council to close two significant loopholes in the city smoking bylaw including the allowance for indoor waterpipe smoking and the allowance for smoking in hotel and motel rooms.

Several Alberta municipalities have already banned smoking in hotel and motel rooms including Canmore, Airdrie and Stettler. Ten Alberta municipalities have banned waterpipe use including Red Deer, Wood Buffalo and St. Albert.

People who work in establishments that allow smoking do not secondclass lungs. All Calgarians deserve uniform protection from secondhand smoke at work. Secondhand smoke is secondhand smoke and there is very little difference in the toxicity of any burned organic material including tobacco, cannabis and shisha.

To summarize, we are making the following recommendations to Council:

1. Extend the ban on smoking and vaping to include all parks and outdoor public events.
2. Remove the loopholes for waterpipe smoking and for smoking in hotel and motel rooms.
3. Declare Calgary to be a smoke-free city and make the health of our children and youth a top priority.

Thank you for your time.

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AHS RECOMMENDATIONS ON CANNABIS LEGALIZATION
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Alberta Health Services

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March 29, 2018

Dear Mayor and Councillors:

Re: City of Calgary Municipal Regulations related to Cannabis

I am writing in follow up to the letter from Dr. David Strong, lead MOH for Calgary & surrounding communities with Alberta Health Services (AHS) that outlined AHS's recommendations regarding the development of municipal regulations so that they reflect a public health approach to the legalization of non-medical cannabis.

The purpose of this letter is to focus on the need for strong measures at the municipal level regarding the smoking, vaping and consumption of cannabis in public places in order to protect and promote health. There are also recommendations for strengthening the bylaws requirements related to smoking and vaping of tobacco and tobacco like products to address gaps in existing provincial and municipal legislation. A separate letter provides recommendations related to the proposed recommendations on planning, development and licensing of retail cannabis outlets so they protect and promote healthy vibrant communities.

I will be requesting to speak about these recommendations at the SPC Community & Protective Services meeting on April 3, 2018 and the April 5th combined meeting of Council.

While Alberta's Bill 26, section 90.28, an Act to Control and Regulate Cannabis, provides for some protection against exposure to smoke or vaped cannabis in selected settings where tobacco smoking is prohibited, it still allows for the widespread smoking and vaping of cannabis in a number of public places. This is due in part to the fact that current Alberta legislation regarding smoking and vaping provides incomplete protection for tobacco and tobacco like products. As a result current provincial legislation of tobacco and cannabis creates a number of health and public safety concerns related to: 1) normalization and promotion of cannabis consumption; 2) renormalization of smoking behavior; 3) public intoxication and impairment; and 4) public exposure to second hand cannabis or cannabis/tobacco smoke.

While Alberta's Tobacco & Smoking Reduction Act (TSRA) when it was passed in 2013 was among the strongest legislation in Canada for prevention and protection, gaps have arisen in the protection that it provides. For example, Alberta is unique among provinces in not having provincial legislation that addresses vaping. In Alberta, this protection is currently provided through municipal regulations where they exist.

The section of TRSA that deals with tobacco like products which would include vaping has not been proclaimed yet and potentially expires in November 2018. It is important that Calgary use the powers, that Bill 26 gives it to strengthen protection for residents and visitors and reduce actual and potential harms.

What are the health threats that the City of Calgary needs to consider in its approach to regulation?

1) **Normalization of cannabis consumption**: While section 90.28 identifies some areas where no smoking or vaping of cannabis can occur there are still many public areas including areas where children and minors would be present that smoking and vaping of cannabis could occur and they would be exposed to the activity. This creates the

potential for smoking and vaping of cannabis or tobacco to be a highly visible behavior and run counter to current and planned public awareness campaigns. ***It is recommended that the city prohibit the smoking, vaping and consumption of cannabis in public. It is also recommended that there be no exemption for medical cannabis to be smoked or vaped in public places.*** An exemption for medical cannabis would be inconsistent with Health Canada's evidence based recommendations for both medical & non-medical cannabis. Health Canada recommends against smoking cannabis and that persons using medical cannabis should not smoke or vaporize cannabis in the presence of children. An exemption for smoking and vaping of medical cannabis creates a challenge for enforcement in that it would require someone to determine whether it is cannabis, tobacco or a blend that they are using. "While there is a limited duty to accommodate people who use cannabis under the care of a physician, this duty does not ever extend to accommodating second-hand smoke." (personal communication M.DeRosenroll, VP ASH)There are other non-combustible forms of medical cannabis available for use as an alternative to smoking.

2) **Renormalization of Smoking Behavior**: A restriction on the smoking and vaping of cannabis helps protect the health gains that have been made in reducing tobacco use over the last 26 years since Calgary's smoking Bylaw 57M92 was passed. The prevalence of smoking in grades 6 to 9 has been reduced by half since mid-90s. The percentage of for 15 to 19 year olds smoking has decreased from 26 % (1999) to 10 % (2015). The restrictions on smoking tobacco in public places that has been achieved through municipal actions to protect against exposure to tobacco smoke in public places has helped prevent children and youth from starting smoking as well as helping smokers quit. The impact is illustrated by the fact that 1 in 2 individuals who continue to smoke will die from tobacco related disease. Research shows how powerful observing someone smoking is as a trigger to try and to relapse as well as how important smoke free spaces are in supporting someone wishing to stop smoking. Smoking and vaping of tobacco, cannabis or other tobacco like product should not be allowed in public places where minors are present. ***AHS recommends that there be no exemption in the bylaw related to events that would allow cannabis to be smoked, vaped or consumed. AHS also recommends that the proposed updated smoking and vaping bylaw include as an additional measure a restriction against smoking or vaping of tobacco and tobacco like products in parks, and in public places/events where minors are present.***

3) **Public Intoxication/Public Safety**: With legalization, it is likely that there will be a number of individuals for whom this may be their initial experience. The following are the recommendations from Health Canada. "Patients with no prior experience with cannabis and initiating such therapy for the first time are cautioned to begin at a very low dose (e.g. 1 mg THC) and to immediately stop therapy if unacceptable or undesirable side effects occur (e.g. disorientation, dizziness, and loss of coordination, agitation, anxiety, rapid heartbeat, chest pain, low blood pressure/ feeling faint, depression, hallucinations, or psychosis).

4) When beginning therapy with cannabis it is best to try to have someone you trust with you in case you experience an adverse effect and require medical attention. Studies have shown that the potency of non-medical cannabis has increased 60 fold from pre-2000 levels as a result of growing methods and selective breeding. The average concentration of tetrahydrocannabinol (THC) consumption by a daily users in Washington State has increased from 4.6 mg/day in pre 2000 to 260 mg/day. The risk of intoxication and impairment is significant and promoting a consumption area increases the risk unless the focus is one of a broader risk reduction for drug intoxication of any kind and operated as an overdose prevention venue.
5) **Public Exposure to Second Hand Smoke:** Research has found that cannabis smoke is hazardous like tobacco smoke. Cannabis smoke has been found to be both mutagenic – damaging cellular DNA and cytotoxic – killing cells. Studies have shown that people exposed to second hand cannabis smoke are absorbing the smoke into their bodies including the detection of THCs. Populations that are at increased risk from second hand cannabis smoke include: pregnant women; infants & children(higher respiratory rates with developing body systems); and individuals with existing respiratory and cardiovascular conditions. Dual use of cannabis and tobacco is common. Tobacco has been observed to increase the uptake of THC by up to 45%. If the city were to allow consumption areas at events, it is unclear how the permit holder for the event with a designated area to vape and smoke cannabis could effectively address the occupational exposures of the staff/volunteers necessary to meet the permit requirements.

Summary of AHS's recommendations.

1) AHS strongly supports the recommendation in the proposed City of Calgary Cannabis Consumption bylaw that "That a person must not smoke, vape or consume cannabis in a public place."

2) AHS recommends against an exemption to allow for the smoking and vaping of medical cannabis. Such an exemption would be in conflict with Health Canada's advice to medical cannabis users. Such an exemption would also create enforcement challenges in the absence of a reliable means of documenting the medical need. There is the availability of alternatives to smoking or vaping for medical cannabis users in public places.

3) AHS recommends against the creation of an area for the smoking, vaping or consumption of cannabis at events. As an alternative and as part of an overall harm reduction approach at events, it may be more appropriate to consider a broader "overdose prevention area" where other drugs besides cannabis could also be consumed" with appropriate response capability to deal with potential overdoses and intoxication. Further consultations and discussions on such an approach should occur.

4) AHS recommends the proposed Smoking & Vaping Bylaw include restrictions on the smoking and vaping of tobacco and tobacco like products in parks and in all public areas where minors are present. AHS also recommends expanding the definition of tobacco to deal with tobacco like products. This is the definition from the TSRA "tobacco- like product" means a product, other than a tobacco product, composed in whole or in part of plants or plant products, or any extract of them. The definition of smoking should also include "lit and heated" as well as burn to cover new and emerging tobacco products.

5) AHS recommends the creation of a business license category for establishments where shisha and water pipe smoking occurs. This would allow for appropriate regulation of these establishments that is not possible at this time under municipal and provincial legislation. This is important given the health risks associated with this establishments and additional potential enforcement challenges with the legalization of cannabis.

Please contact me if you have any questions with regard to this letter or the earlier letter from Dr. Strong.

Sincerely,

Brent T Friesen MD FRCPC
Lead Medical Officer of Health, Provincial Tobacco Reduction Program
Population, Public, & Indigenous Health
Alberta Health Services

Alberta Health Services

Healthy Albertans.
Healthy Communities
Together.

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March 29, 2018

TO: Calgary City Council

Re: AHS's Recommendations to the Combined meeting of City Council April 5, 2018 Regarding Proposed Cannabis Business Licensing and Land-use Bylaws

Following the February 21st, SPC PUD meeting, AHS would like to express concern about the following motions put forward by committee and offer an alternative motion:

SPC PUD recommendation	AHS alternative motion
Allow for a relaxation of the 100 m setback with respect to vacant school reserves and municipal reserve parcels	Implement at 300m set back distance from all schools and vacant school reserves
Remove the 30 m separation distance between the closest point of a Cannabis store to a liquor store	Implement a 100m minimum distance from tobacco and liquor retailers, in addition to a square kilometer density restriction, at the onset of legalization
Remove the 150m separation distance from a post-secondary institution	Reinstate Administrations initial recommendation of a 150m separation distance
Remove 10m separation distance from a Pawn Shop and Payday loan store	Reinstate Administration's initial recommendation of a separation distance

Additionally, AHS is concerned that the committee also failed to increase the separation distance from a child care service, which highlights disparity in policy protecting school aged children differently than children under 5, and those in before and after school care. AHS recommends a 300m distance from a childcare service. Further, where evidence is incomplete or inconclusive, AHS is advising that a precautionary approach be taken to minimize unintended consequences.

As follow up to the AHS Recommendations on Cannabis Regulation for Alberta Municipalities, circulated by Dr. David Strong, lead Medical Officer of Health (MOH) for Calgary Zone with Alberta Health Services, AHS would like to further address the issues of business licensing and land-use bylaws as they pertain to Cannabis.

Business licensing and land-use by-laws have the potential to impact community and its citizens in a number of ways. Where cannabis businesses are located, how many are located in Calgary and how they are distributed throughout communities, have the potential to create a number of health concerns such as: increase youth access, and increase normalization by way of increased visibility. Without strict regulation as identified in the intent behind Federal legalization, implementation of the 84 federal recommendations becomes difficult. In order to minimize the harms of use, and restrict youth access, AHS recommends the following:

- Limit the number of cannabis stores in the first phases of implementation
  - Lessons learned about alcohol, which has seen a 600% increase in the number of liquor stores since privatization, provides significant rationale for limiting the number of stores in a given community.
  - The number and concentration of alcohol outlets are likely to have a significant effect on excessive consumption and alcohol-related harms.
  - Washington State has seen consumption of THC increase 60 times by a daily cannabis user, from 4.6mg/day pre-2000, to 260mg/day post-legalization.

- Implement density and distance controls to prevent stores from clustering, while also keeping buffer zones around well-defined areas where children and youth frequent.
  - Density limits reduce neighborhood impacts and youth access
  - Physical availability of medicinal marijuana dispensaries impacts current use and increase frequency of use
  - Research done on alcohol and tobacco use highlights the need for stronger controls on density and minimum distances.

- Limit hours of operation to limit availability late at night and early morning hours.
  - Basing hours of operation on the alcohol model, repeats policy that has resulted in harms to communities and harms to Albertans.
  - International evidence on availability of alcohol indicates that longer hours of sale significantly increases the amount of alcohol consumed and the rates of alcohol related harms.
  - Most US legalized states limit hours of operation to 10pm or midnight.

- Implement a 300-500m minimum distance restriction between cannabis retail outlets

- Implement a 300m distance between cannabis stores and schools, daycares and community centers.
  - The average separation distance for schools reported in a study that listed 12 US cities was approximately 250m.
  - Shorter distances/higher density are associated with high-risk consumption behaviours – especially among youth, and facilitate greater access and possession by adolescents.
  - Concerns around product promotion and exposing youth to cannabis are well documented.

- Implement a 100m minimum distance from tobacco and liquor retailers, in addition to a square kilometer density restriction, at the onset of legalization.
  - This is an effective harm-reduction policy that will help discourage co-use.
    - Simultaneous use of alcohol and cannabis has been found to roughly double the odds of impaired driving, social consequences, and harms to self.

  - This approach also helps to prevent clustering among liquor, tobacco and cannabis stores, with the purpose of having a positive impact on communities with few resources and vulnerable populations.
- Include community engagement and approvals as part of the business licensing process, similar the approach used in Denver Colorado.

- Commit to reviewing and evaluating all Cannabis related bylaws and policy decisions over a short and long term period to ensure no unintended harms or consequences go unaddressed.

Finally, these precautionary approaches are consistent with the recommendations of Federal Taskforce on the Legalization and Regulation of Cannabis (Government of Canada, 2016). They apply the wisdom and lessons learned from alcohol and tobacco policy, which is, applying more protective regulations to reduce harms, is never as easy or as popular as relaxing more restrictive policy in the first place.

Sincerely,

Brent T Friesen MD FRCPC
Lead Medical Officer of Health, Provincial Tobacco Reduction Program
Population, Public, & Indigenous Health
Alberta Health Services

Attached:
1. AHS Recommendations on Cannabis Regulations for Alberta Municipalities
2. AHS Recommendations on City of Calgary Cannabis Regulations
3. Public Health Perspectives on Cannabis Legalization in Alberta
4. A Public Health Approach to Cannabis Legalization
5. Cannabis Regulation: Lessons Learned in Colorado and Washington State, by CCSA, November 2015

- Nemeth, J. & Ross, E. (2014). Planning for marijuana: The cannabis conundrum. *Journal of the American Planning Association, 80*(1), 6-20.
- U.S Surgeon General. (2018). *Preventing tobacco use among youth and young adults*. Retrieved from
- https://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/factsheet.html Health Canada. (2016).
- *A framework for the legalization and regulation of cannabis in Canada: The final report of the task force on cannabislegalization and regulation*. Ottawa, ON: Government of Canada.
- Alberta Health Services. (2017*). Neighbourhood deprivation, alcohol consumption and health and social outcomes: A review of recent literature.* Calgary: Alberta Health Services
- *Caulkins, J, Kilmer, B., & Kleiman, M. (2016). Marijuana legalization: what everyone needs to know. Second Ed. New York, NY: Oxford University Press.*

April 2018

Cannabis Legalization in Alberta: Promoting & Protecting Health

Alberta Health Services

Health Panel Members

Angeline Webb	Canadian Cancer Society
Richelle Schindler	Cumming's School of Medicine U of C
Les Hagen	Action on Smoking & Health
Michelle Fry	Addictions & Mental Health AHS
Brent Friesen	Medical Officer of Health AHS Calgary Zone
Kayla Atkey	Alberta Policy Coalition for Chronic Disease Prevention

Intent of Proposed Federal Cannabis Act

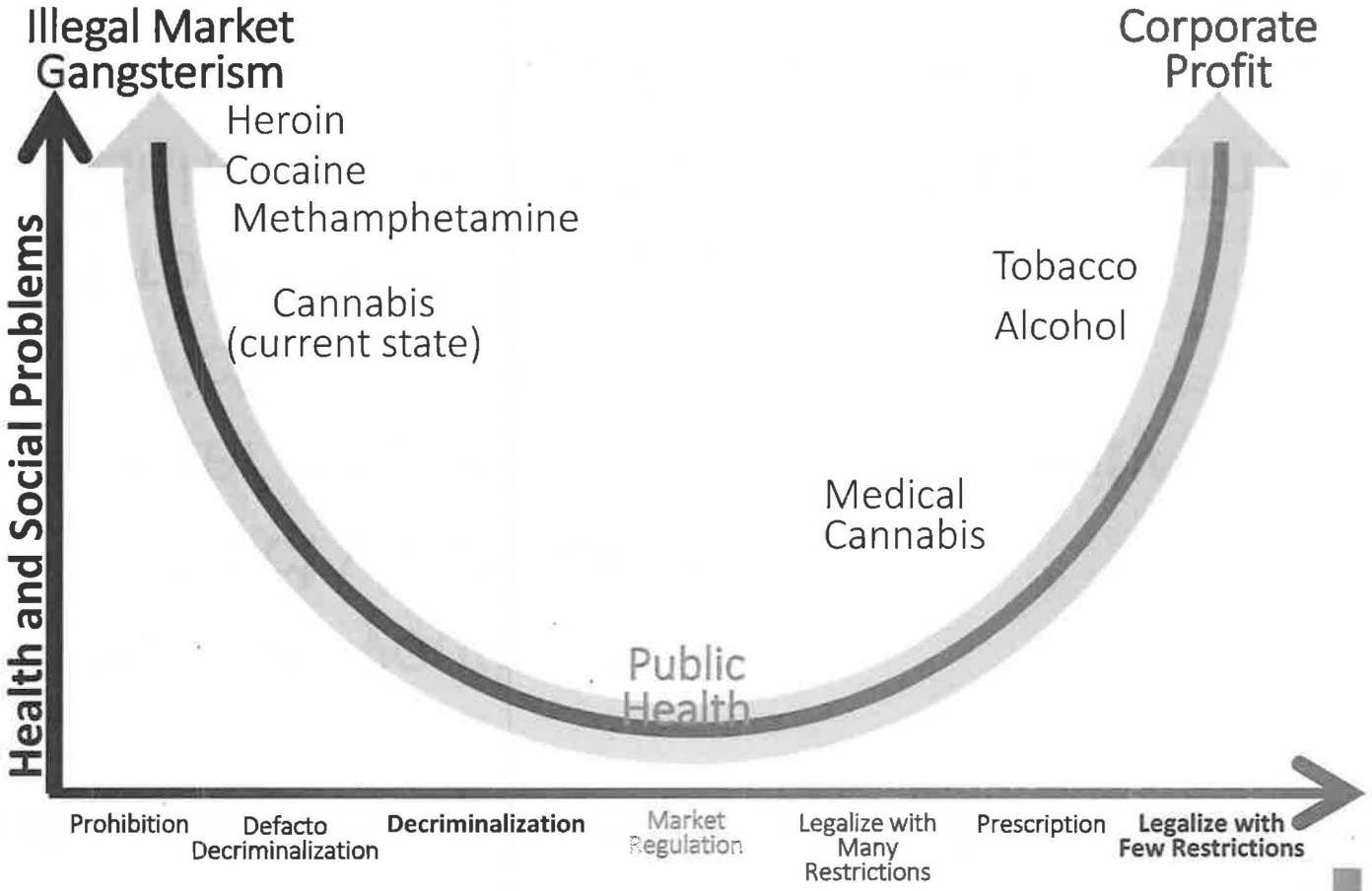
- Restrict youth access
- Protect young people
- Deter and reduce criminal activity
- Strictly regulate
- Protect public health
- Enhance public awareness of health risks
- Provide for legal production of cannabis

(Current program for medical cannabis will continue)

Public health approach

The Paradox of Prohibition

Canadian Drug Policy Coalition
Coalition canadienne des politiques sur les drogues



Canadian Drug Policy Coalition, www.drugpolicy.ca, concept from John Marks.

Alberta Health Services

Public health priorities

Minimize harm

Protect
health & safety of Albertans

Prevent
likelihood of use and problematic use

Assess
population health outcomes

Address
determinants of health & health equity

Provide services

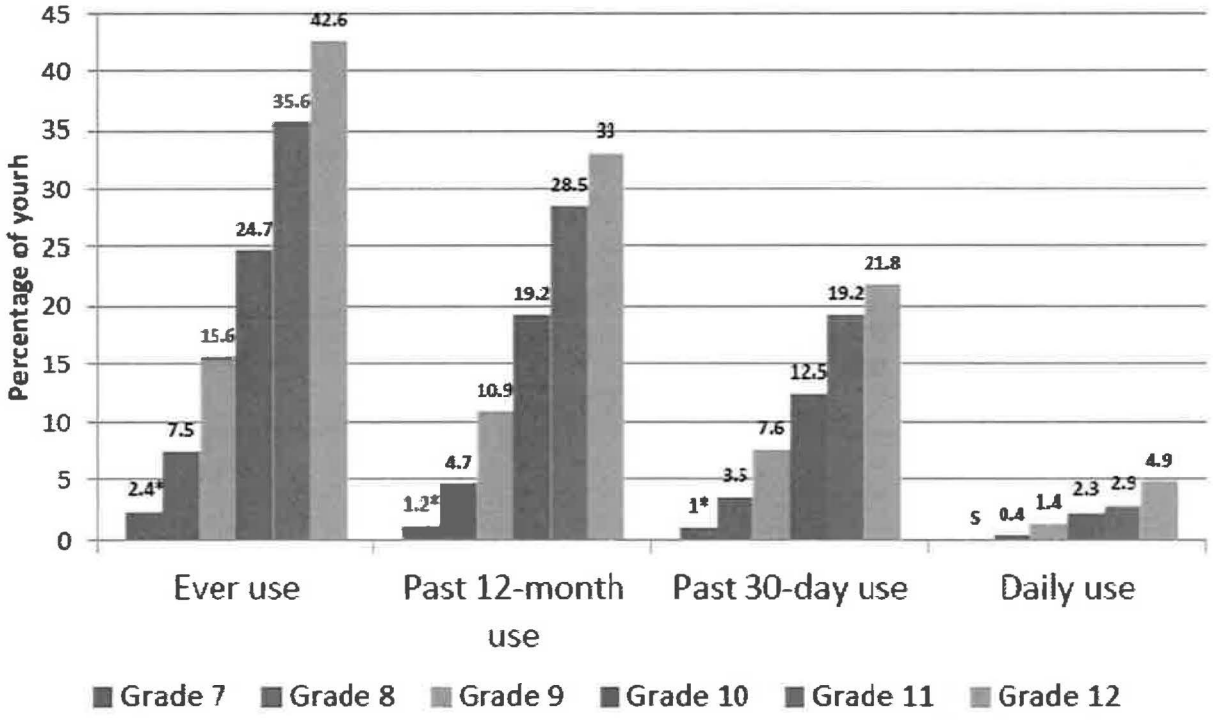
Health risks

- Brain development
- Consumption – early use, location, dependence
- Vulnerable populations
- Mental health
- Driving
- Chronic disease

University of Calgary Evidence Series:
https://open.alberta.ca/dataset/0239e5c2-5b48-4e93-9bcc-77f72f7bdc5e/resource/021d8f84-5d8b-4e21-b0bb-81340d407944/download/AHTDP-Cannabis-Evidence-Series-2017.pdf

Cannabis Use

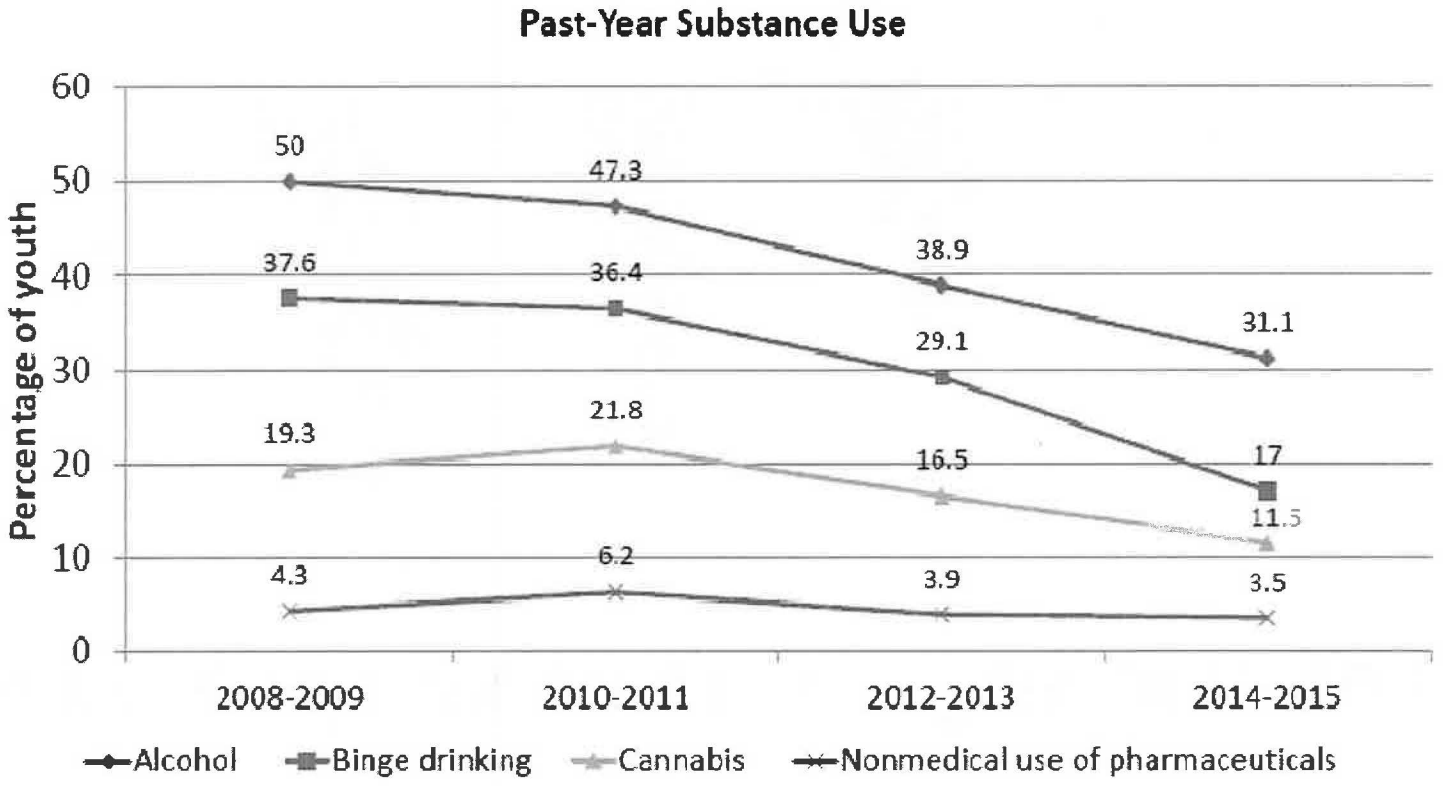
Prevalence of cannabis use – Canadian youth



SOURCE: Canadian Student Tobacco, Alcohol, and Drugs Survey 2014-2015; Grades 7-12 (*N* = 36,665)

Cannabis Use

Substance use trends over time – Alberta youth



SOURCES: Youth Smoking Surveys 2008-2013; Canadian Student Tobacco, Alcohol, and Drugs Survey 2014-2015; Grades 7-12

Consumption

Second Hand Cannabis Exposure

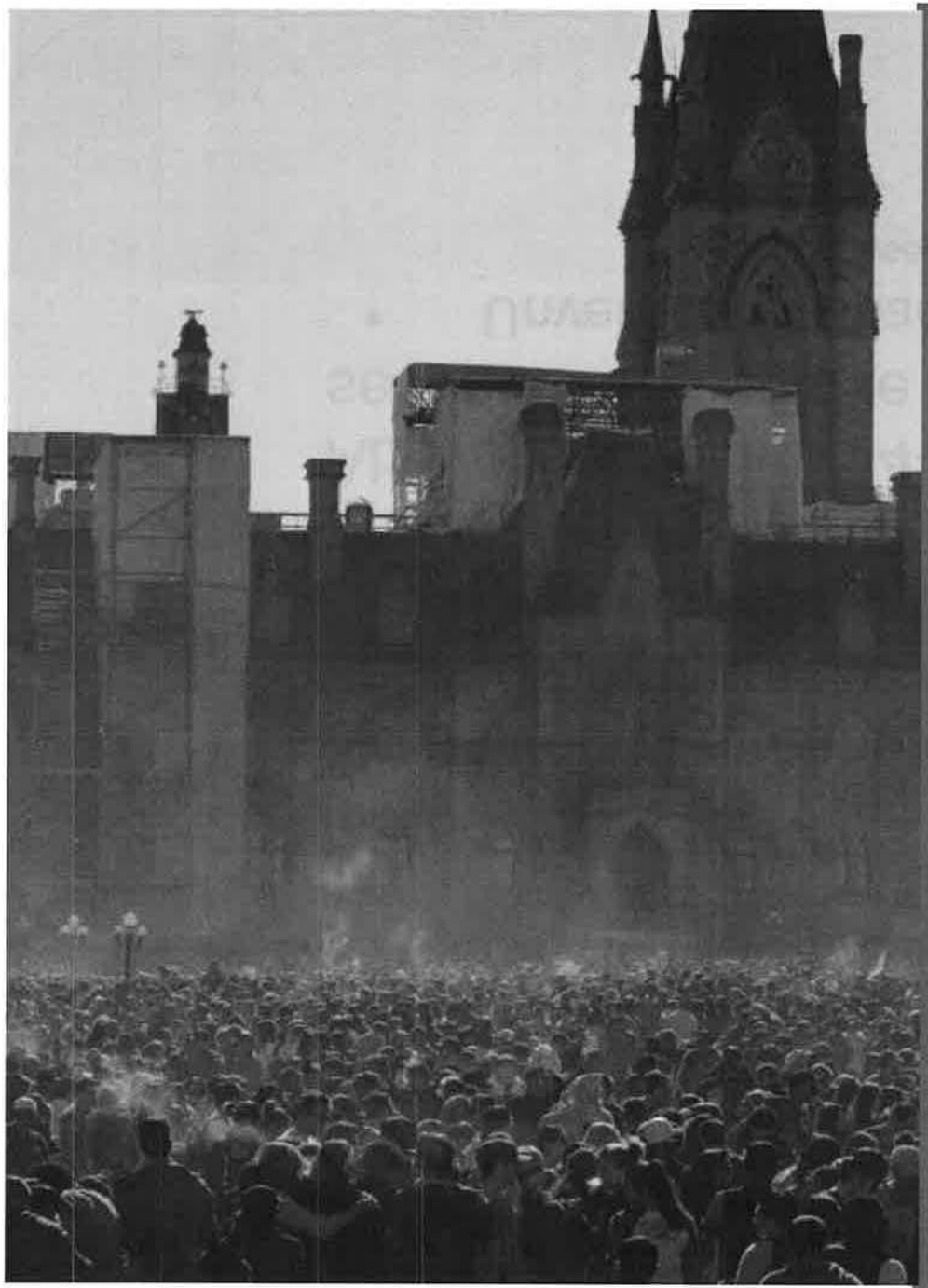
- Second-hand cannabis smoke is more mutagenic and cytotoxic than tobacco smoke

(Cone et al., 2011; Maertens et al., 2013; Health Technology Assessment Unit, 2017)

2017 Study

- No universal threshold to determine smoker vs. second-hand smoke exposure
  - 5ng/ml blood & 10ng/ml urine common measures of impairment
- Above levels found 4-8hrs after exposure to second–hand smoke
  - Unventilated spaces (small room or vehicle)

(Holitzki, Dowsett, Spackman, Noseworthy, & Clement, 2017).



Cannabis Consumption Bylaw

4 20 Party Parliament April 2016 Reuters

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Proposed Cannabis Consumption Bylaw

- We strongly support restriction on smoking, vaping and consuming cannabis in public spaces
- Consistent with public health approach until we can understand the full health harms

Proposed Changes to Consumption Bylaw

Delete Events Section 4 which allows for creation of "Cannabis Gardens" where cannabis can be consumed

- Normalizes cannabis smoking & vaping
- Renormalizes smoking tobacco
- Second hand exposure staff volunteers
- Difficult to regulate
  - Monitoring intoxication/impairment
  - Insurance and liability
  - Challenge of the tobacco/cannabis mix product

Proposed Changes to Consumption Bylaw

Delete Section 5 that allows for medical cannabis smoking and vaping in public places

- Health Canada advises against smoking & vaping of medical cannabis
- Alternative products are available
- Exemption for medical cannabis creates needless complexity in enforcement
- Creates confusion in social norms about whether smoking or vaping is allowed in particular setting

Consultation on the Future of Tobacco Control in Canada

WHAT WE HEARD

December 2017

Health Canada / Santé Canada

Canada

Angeline Webb
Les Hagen

SMOKING & Vaping Bylaw

Alberta Health Services

Tobacco related diseases kill 10 Albertans Every Day

- With an estimated 45,000 deaths attributable to smoking in Canada in 2012, leading to nearly 600,000 potential years of life lost for premature mortality, tobacco use remains the leading preventable cause of disease and premature death in Canada

Conference Board of Canada 2017

Proposed Smoking & Vaping Bylaw

- Adjust smoking definitions to include new products such as heat not burn
- Amend Section 3b to include Public Parks & Public Events under areas where smoking & vaping is prohibited

Cannabis, Tobacco, Shisha and Water Pipe Smoking

- 2012 Alberta's Chief MOH identified hazards associated with water pipe smoking
- Water pipe smoking is major route of tobacco exposure for youth & young adults (**herbal ≠ safe**)
- Currently regulations for water pipe smoking have not been implemented
- Enforcement challenges will increase with legalization of cannabis
- Need to protect workers and children

Michelle Fry

Business Licencing

Alberta Health Services

"There are more medical marijuana dispensaries in Denver than Starbucks and McDonald's stores"

The Denver Post

Acknowledgement Dr. Doris Gunderson

Limit hours of operation

- to limit availability late at night and early morning hours
- International evidence on alcohol availability shows that longer hours of sale increase the amount of alcohol consumed & rates of alcohol related harms.
- Most US legalized states limit hours to 10pm or mid-night.

Recommend 10pm close

Limit number of stores

Increased availability of medicinal dispensaries impacts current use and increases frequency of use (Morrison et al., 2014)

Lessons learned from alcohol

- 600% increase in the number of liquor stores since privatization in AB
- Number & concentration of alcohol outlets likely have a significant effect on excessive consumption and alcohol-related harms
- Research is clear, that as alcohol availability increases, so does the social and health harms to community.

Separation distance & density

- Important harm reduction tool to reduce
  - Access
  - Exposure
  - Normalization
- Research on alcohol and tobacco use highlight the need for stronger controls on density and minimum distance
- Density limits reduce neighborhood impacts and youth access (CCSA,2015)

AHS recommendations on separation distance

300-500m distance between cannabis retail outlets

300m between schools, childcare & community centres

100m distance from liquor and tobacco retail

A square kilometer density restriction

- reduce neighbourhood impacts & youth access

Other places: parks, recreation facilities, places of worship

Separation Distances

Separation of Cannabis store	Administration's report	AHS feedback
From other cannabis stores	300m	300-500m
from property line of school	**150m**	**300m**
from post-secondary	**150m**	**300m**
from childcare service	**10m**	**300m**
from liquor stores	**30m**	**100m**

Retail cannabis licensing objections

AGLC does not regulate

- The number of cannabis stores in a municipality
- The location of stores and space between stores
- Municipal responsibility

Highlights the need for outlet density, and location of stores to be part of the municipal licensing process

Required community outreach

City of Denver

- Requires applicants to list all registered neighborhood organization whose boundaries encompass store locations and outline their outreach plans to create positive impacts in the neighborhood.

City of Calgary could address this by including a Good Neighbour Agreement in the business license application.

Addition of health to business license review

Review of License Applications

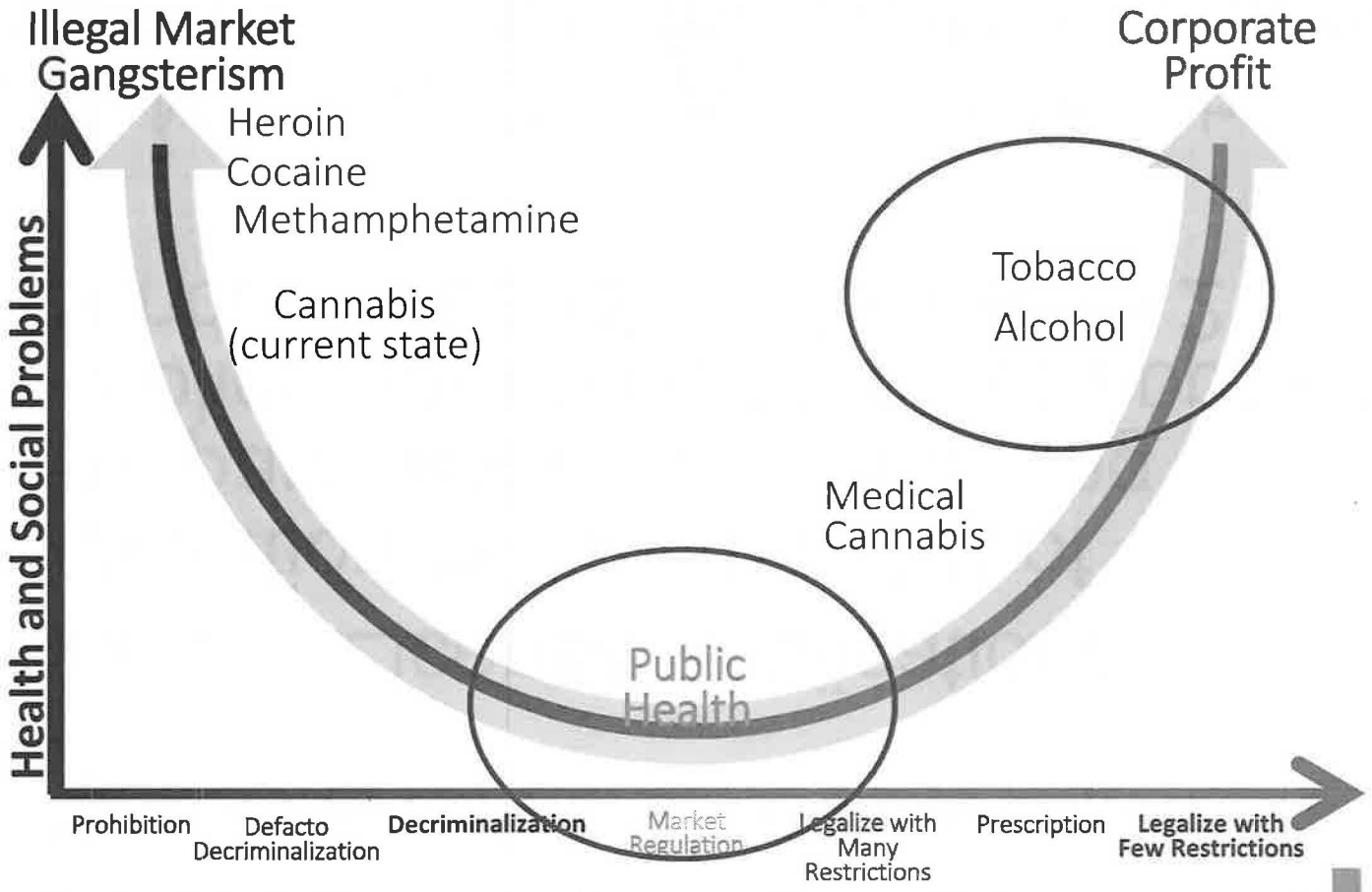
- Addition of Health to list of departments (Fire, Planning & Police) for consultation or approval under Appendix A 23.1 & 23.2

Draft Motion: On page 4 of Attachment 1 Proposed wording for a bylaw to amend the business bylaw "Health" should be added to the list of department of Fire, Planning & Police for 23.1 & 23.2

Public Health Approach

The Paradox of Prohibition

Canadian Drug Policy Coalition
Coalition canadienne des politiques sur les drogues



Canadian Drug Policy Coalition, www.drugpolicy.ca, concept from John Marks.

Alberta Health Services

Thank-you for your time

Questions

RESPONSIBLE, LOWER-RISK USE MEANS:

- Cannabis may be legal for 18+ but there are negative health effects. Be informed, be cautious.
- Delay using cannabis until later in life.
  - The brain continues to develop until the mid-20s
  - Cannabis can hamper brain development
  - Evidence suggests using cannabis in early adolescence can cause adverse effects to the developing brain and increases risk of long-term cognitive impairments
- If you choose to use cannabis, choose lower-risk products such as low THC and avoid smoking it.
- Limit and reduce your use of cannabis.
  - Frequent use is linked to higher health/social problems.
  - Limit to occasional use such as on weekends, or one day a week at most.

RESPONSIBLE, LOWER-RISK USE MEANS:

- Avoid mixing cannabis with alcohol, tobacco or prescription drugs
  - Using alcohol and cannabis together may result in greater impairment so it is not a good idea to combine them.
  - Tobacco and cannabis together increases risks of addiction to nicotine and problematic use.
  - Prescription drugs can be affected by cannabis so avoid combining unless supervised by your doctor.
- Don't use and drive.
  - Cannabis affects reaction time, coordination and concentration.
  - Cannabis use increases chances of being in a motor vehicle collision.
- Don't use if you have your own or a family history of psychosis, substance use disorders or other mental health problems.
- Don't use if you are pregnant/nursing or think you might be.

RESPONSIBLE, LOWER-RISK USE MEANS:

- Avoid smoking cannabis.
  - Like cigarettes, smoking cannabis can harm your lungs.
  - If you do choose to smoke cannabis, avoid inhaling deeply or holding breath to decrease toxic substances going into your lungs and body.
- Don't use synthetic cannabinoids (e.g. K2,, Spice). It can be more toxic and potent and create a greater risk for overdose.
- Be aware of bad reactions
  - Symptoms of using too much cannabis include: paranoia, panic, increased HR, confusion, nausea/vomiting.
  - If you, or someone you know, is having trouble breathing, has gone pale, or is unresponsive, call 911.

Potency

- Potency today is much greater than in pre-2000
  - Due to growing methods and selective plant breeding
- THC consumption
  - Pre-2000 4.6mg/day
  - Today in WA 260mg/day

    = 60x increase in daily THC consumption

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AHS Recommendations on Cannabis Regulations for Alberta Municipalities

Prepared on behalf of AHS by: Dr. Gerry Predy, Senior Medical Officer of Health/Senior Medical Director – Population, Public and Indigenous Health

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The following includes information and recommendations that will help municipalities make cannabis policy decisions that promote and protect the health of its citizens. Alberta Health Services (AHS) supports an evidence-informed public health approach (Chief Medical Officers of Health of Canada, 2016) that considers health and social outcomes in the development of municipal cannabis policies and bylaws. Lessons learned from tobacco and alcohol have also been used to inform these positions.

SUMMARY OF RECOMMENDATIONS

Overall

Where evidence is incomplete or inconclusive, AHS is advising that a precautionary approach be taken to minimize unintended consequences. This approach is consistent with the recommendations of Federal Taskforce on the Legalization and Regulation of Cannabis (Government of Canada, 2016).

Business Regulation & Retail

- **Limit the number of cannabis stores, and implement density and distance controls to prevent stores from clustering, while also keeping buffer zones around well-defined areas where children and youth frequent.**
- **Consider requirements for cannabis education and community engagement as part of the business licensing approval process.**
- **Limit hours of operation to limit availability late at night and early morning hours.**
- **Restrict signage and advertising to minimize visibility to youth.**

Consumption

- **Ban consumption in areas frequented by children.**
- **Align the cannabis smoking regulations with the *Tobacco and Smoking Reduction Act* and/or with your municipal regulations, whichever is more stringent.**
- **Ban smoking, vaping and water pipes in public indoor consumption venues.**

Home growing

- **Design a process to ensure households and properties are capable of safely supporting home growing.**

Multi-Unit Housing:

- **Health Canada (2017) has recommended a ban on smoking in multi-unit housing. AHS recognizes that there are potential health risks associated with second-hand smoke within multi-unit housing environments and therefore recommends municipalities consider bylaws that ban smoking in multi-unit housing.**

Research and Evaluation

- **Ensure mechanisms to share data across sectors and levels of government are established, and appropriate indicators are chosen to monitor the impacts of policy implementation on communities.**

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DETAILED RECOMMENDATIONS

The following sections provide evidence and additional details for each of the above recommendation areas.

Overall

Overall, AHS encourages municipalities to proceed with caution for two reasons. First, there is little reliable and conclusive evidence to support what safe cannabis use looks like for individuals and communities. Second, it's easier to prevent future harms, by removing regulations in the future once more knowledge exists, than it is to later add regulation. (Canadian Centre for Substance Abuse, 2015; Chief Medical Officers of Health of Canada, 2016).

Evidence shows commercialization of alcohol and tobacco has resulted in substantial population level morbidity and mortality as well as community level harms. This is of particular importance because adding cannabis use to a community adds multifactorial relationships to already existing social issues, as we know co-use or simultaneous use of cannabis, alcohol and/or tobacco, in some kind of combination is common (Barrett et al. 2006; Canadian Centre for Substance Abuse, 2007; Subbaraman et al. 2015). For example, simultaneous use of alcohol and cannabis has been found to approximately double the odds of impaired driving, social consequences, and harms to self (Subbaraman et al. 2015). According to AHS treatment data, of those using AHS Addiction Services, more than half used cannabis, and of those who use cannabis, 90% have used alcohol and 80% have used tobacco (Alberta Health Services, 2017). Further evidence indicates that legalization of cannabis may have negative impacts related to resource utilization, law enforcement and impaired driving cases, and self-reported cannabis-related risk factors and other substance use (Health Technology Assessment Unit, 2017).

Business Regulations & Retail Sales

Location and Number of Stores

Alberta Health Services recommends municipalities strengthen zoning regulations by using a combination of population and geographic based formulas to restrict the number and location of cannabis outlet licenses. In particular AHS recommends that municipalities:

- Limit the number of business licenses issued in the first phases of implementation.
- Implement a 300-500m minimum distance restriction between cannabis retail outlets
- Implement a 300m distance between cannabis stores and schools, daycares and community centers.
- Implement a 100m minimum distance from tobacco and liquor retailers, in addition to a square kilometer density restriction, adjusted for population, at the onset of legalization.
- Note: additional analysis may be needed to ensure that unintended consequences do not negatively impact existing communities (e.g., clustering, social and health harms, vulnerable populations).

Between 1993 (just before privatization) and 2016, there was a 600% increase in the number of liquor stores in Alberta (208 stores in 1993, 1,435 stores in 2016). Privatization has also resulted in drastic product proliferation, with an increase from 2,200 products in 1993 to 23,072 products in 2016 (AGLC, 2016). Without more restrictive cannabis regulations, business owners will demand and industry will deliver a greater variety of cannabis products, likely resulting in an expansion of consumption in communities across Alberta. U.S. researchers predict a doubling of consumption rates over time as a result of legalization, which means an estimated 40 billion more hours of intoxication in the US (Caulkins, 2017). A privatized system without initial restrictive regulation will likely follow similar trends in Alberta, resulting in significant health and social impacts on communities.

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Density limits reduce neighbourhood impacts and youth access (Canadian Centre for Substance Abuse, 2015; Freisthler & Gruenewald, 2014). Research on alcohol and tobacco use highlights the need for stronger controls on density and minimum distances (Ammerman et al., 2015; Chen, Gruewald & Remer, 2009; Livingston, 2011; Popova et al., 2009; Rowland et al., 2016;) For example, the physical availability of medicinal marijuana dispensaries impact current use and increase frequent use (Morrison et al., 2014). Similarly with liquor stores, higher densities are associated with high-risk consumption behaviours–especially among youth, facilitating access and possession by adolescents, as well as increased rates of violence and crime (Ammerman et al., 2015). In addition, U.S. researchers have found that medical cannabis outlets are spatially associated with market potential which points to a form of "environmental injustices in which socially disadvantaged are disproportionately exposed to problems." Therefore, jurisdictions should ensure that communities with fewer resources (e.g., low income, unincorporated areas) are not burdened with large numbers of stores and prevent clustering among liquor, tobacco and cannabis stores (Morrison et al., 2014). Other US research shows that zoning laws for location are an effective way to prevent overpopulation of cannabis stores in undesirable areas (Thomas & Freisthler, 2016). Summary tables of some US state and city buffer zones can be found in Nementh and Ross (2014).

It is clear that locating cannabis stores away from schools, daycares and community centers is essential to protecting children from the normalization of Cannabis use (Rethinking Access to Marijuana, 2017). Therefore, municipalities should ensure that all provincially recognized types of licensed and approved childcare options are included in their regulations. For example, daycare facilities, account for 39.9% of licensed childcare spaces in the province. Pre-schools, out-of-school programs, family day-homes, innovative child care, and group family child care programs account for the remaining 60% of licensed child care in the province.[2] Through business licensing and zoning, municipalities have the opportunity to protect all childcare spaces by including these locations in local buffer zones. Many preschools and childcare facilities are already located in strip malls or community associations or churches adjacent to liquor outlets (bars or liquor stores). Cannabis stores should not be allowed to be located within a buffer zone of any type of childcare facility or school. AHS also suggests that municipalities include other places that children and youth frequent as part of minimum distance bylaws such as parks, churches, and recreation facilities (Canadian Centre for Substance Abuse, 2015; Rethinking Access to Marijuana, 2017).

Business/Development License Application Processes

AHS suggests that a cannabis education component and community engagement plan be added to the application processes for retail marijuana business licenses. As cannabis legalization is complex, there are many new legal implications, and potential health and community impacts. Potential business owners should demonstrate a base knowledge of cannabis safe use and health harms, as well as the new rules. It is also important to foster a healthy relationship between cannabis retailers and the community with the common goal of healthy community integration. The City of Denver has implemented a community engagement requirement where applicants must list all registered neighborhood organizations whose boundaries encompass the store location and outline their outreach plans. Applicants must also indicate how they plan to create positive impacts in the neighbourhood and implement policies/procedures to address concerns by residents and other businesses (City of Denver, 2017).

Municipalities are encouraged to require applicants to outline proper storage and disposal of chemicals, as well as proper disposal of waste products. In addition, applicants should outline how they will be managing odor control to prevent negative impacts on neighbours.

Hours of Operation

AHS recommends restricting hours of operation as a means to reduce harms to communities (Rethinking Access to Marijuana, 2017). In regards to alcohol-related harm, international evidence on availability indicates that

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longer hours of sale significantly increase the amount of alcohol consumed and the rates of alcohol related harms (Griesbrecht et al., 2013). The Centre for Addiction and Mental Health suggests restricting alcohol sales to 9 business hours per day, with limited availability late at night and in the early hours of the morning (D'Amico, Miles & Tucker, 2015). Most regulations in the US legalized states limit hours of operation to 10pm or midnight (California, 2017; Oregon, 2017; State of Colorado, 2017; Washington State Liquor and Cannabis Board, 2017). AHS recommends limiting the number of and late night/early morning hours of operation for cannabis stores (Griesbrecht et al., 2013; Rethinking Access to Marijuana, 2017).

Advertising and Signage

AHS recommends that municipalities include policy/bylaw considerations to limit advertising to dampen favorable social norms toward cannabis use (D'Amico, Miles & Tucker, 2015). Further, while it is important to implement the principles of Crime Prevention through Environmental Design (i.e., the physical space should be well lit, tidy, include proper parking etc.), the physical appearance should not encourage or engage patrons. A similar policy has been implemented in Denver, Colorado. This approach is supported by a large body of evidence related to alcohol and tobacco. (Joseph, et al., 2015; Hackbarth et al., 2001; Lavack & Toth, 2006; Malone, 2012).

Consumption

AHS recommends that municipalities align their regulations with the *Tobacco and Smoking Reduction Act*. In addition, municipalities may also want to consider enacting bylaws that consider banning tobacco-like substances such as shisha.

AHS recommends that municipalities implement regulations banning consumption in public places, as well as for public intoxication (see Alberta Liquor and Gaming Act). The rationale for this is two-fold: (i) cannabis is an intoxicating substance and should therefore be treated similarly to alcohol, and (ii) harms related to second and third-hand smoke, especially for children and youth. Second-hand cannabis smoke is more mutagenic and cytotoxic than tobacco smoke, and therefore second-hand inhalation of cannabis should be considered a health risk (Cone et al., 2011; Health Technology Assessment Unit, 2017; Maertens, White, Williams & Yauk, 2013).

Special attention should be directed at banning consumption in areas frequented by children, including: all types of parks (provincial, municipal, athletic parks, baseball, urban, trails/pathways, etc.), playgrounds, school grounds, community centers, sports fields, queues, skateboard parks, amphitheaters, picnic areas and crowded outdoor events where children are present (i.e., all ages music festivals, CFL football games, rodeos, parades, Canada Day celebrations, outdoor festivals, outdoor amusement parks (private), golf courses, zoos, transit and school bus stops, ski hills, outdoor skating rinks or on any municipal owned lands) (Rethinking Access to Marijuana, 2017). Public consumption bans should also be enacted for hospitals (all points of health care, urgent care clinics, clinics, etc.), picnic areas (alcohol limits for outdoor consumption). Currently, consumption of tobacco and tobacco-like products is not permitted on any AHS property.

Venues for consumption

Until adequate evidence-based rationale can be provided, AHS does not support having specific venues for indoor consumption (smoking, vaping, water pipes) as this would expose people to second-hand smoke, promote renormalization of smoking, reverse some of the progress made with public smoking bans, and present occupational health issues (i.e., second and third hand smoke exposures, and inadvertent intoxication of staff and patrons).

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Home Growing

AHS recommends households interested in personally cultivating cannabis go through a municipal approval process and that owners have access to reference educational materials related but not limited to: mitigating child safety, security, water use, electrical hazards, humidity, and odor concerns. These materials will help ensure the property is capable of safely supporting home growing and help reduce the negative impacts to surrounding properties (Rethinking Access to Marijuana, 2017).

While allowing citizens to grow cannabis plants at home may provide more options for access, there are risks to public health and safety. Further, as Bill 26 currently reads, as it pertains to personal cultivation, municipalities can expect an increase in nuisance complaints. Cannabis is also known to be a water and energy intensive crop, as such; this impacts municipalities in a number of ways (Bauer et al., 2015; Cone et al., 2011; Health Technology Assessment Unit, 2017; Mills, 2012). For example, personal cultivation brings risks related to air quality, ventilation, mold, odors, pests, chemical disposal, indoor herbicide/pesticide use, increased electrical use and fire risk, and accidental consumption. Further, all of these risks are amplified when children are present in the home and/or multi-unit dwelling.

In Colorado, it is estimated that one-third of the total cannabis supply comes from personal cultivation as permitted to medical cannabis users (Canadian Centre on Substance Abuse, 2015). As such, municipalities alongside AHS should anticipate requiring additional resources as a system cost to be able to adequately respond to public health and community nuisance complaints. Furthermore there may be additional municipal human resource needs, as well as an increase in hazards, as it relates to indoor personal cultivation, impacting departments like waste services, fire, police and bylaw services. Finally, additional building codes and safety codes may be required in order to effectively manage and address hazards pertaining to heating, ventilation and air cooling systems, as well as building electrical.

Multi-Unit Housing

Existing tools for managing the issue of cannabis consumption and personal cultivation in multi-unit housing will likely not be sufficient to manage this issue. It will be important to recognize the negative health effects of second and third-hand smoke and risks related to personal cultivation when considering municipal regulations for multi-unit housing.[1] Other changes that are needed to address both indoor consumption and personal cultivation in multi-unit housing include:

- additional building codes and safety codes to effectively manage and address hazards pertaining to heating, ventilation and air cooling systems, as well as building electrical,
- appropriate language in bylaws as they pertain to alcohol and/or public intoxication.

Health Canada (2017) has recommended a ban on smoking in multi-unit housing. AHS recognizes that there are potential health risks associated with second-hand smoke within multi-unit housing environments and therefore recommends municipalities consider bylaws that ban smoking in multi-unit housing.

Finally, as mentioned above, AHS Environmental Public Health is not currently in a position to effectively respond to the anticipated number of nuisance complaints received if smoking cannabis is allowed in multi-unit housing, both in terms of staffing, as well as in terms of enforcement. AHS encourages municipalities to plan for additional human resources if pre-emptive measures are not considered.

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Additional Considerations

Education and Awareness

Evidence-informed public education and consistent messaging will be critical for promoting and protecting health of citizens. Many areas of education and awareness will be needed including: new/amended bylaws and regulations, home growing rules, and health impacts. As messages are developed it is important that municipalities, along with other stakeholders provide balanced, factual and unsensational messages about cannabis use and its impacts on communities (Canadian Centre on Substance Abuse, 2015).

Public education alone is only effective at creating awareness in a population. Comprehensive, multi-layered strategies that include social normative education, harm reduction, fact based information and targets multiple environments and populations should be used (Chief Medical Officers of Health of Canada, 2016). As municipalities move through this process it is important to note that public education should not be used as a substitute for effective policy development with strong regulations to protect communities from harms.

Capacity to Administer and Enforce

Regulatory frameworks are only successful if there is the capacity to implement them. Other jurisdictions have reported significant human resource needs to administer new regulations. For example, the City of Denver added over 37 FTEs across sectors including administration, health-related issues, public safety, and inspections (Canadian Centre on Substance Abuse, 2015).

Research and Evaluation

Moving forward, Alberta Health Services would like to strengthen their partnerships with municipalities to set up data sharing mechanisms between sectors. A key lesson learned from some US jurisdictions is to ensure mechanisms to share data across sectors are established (i.e., public health, transportation, public safety, seed-to-sale tracking, finance, law enforcement) (Freedman, 2017). This has been shown to help identify problematic trends sooner and more efficiently. Further, AHS encourages municipalities to advocate for provincial legislation to support data sharing and system integration.

Lessons learned from Washington State and Colorado indicate that baseline data was difficult to come by. Therefore, it is recommended that all levels of government and school boards review data collected and wherever possible separate variables that relate to cannabis use from other aggregate level data.[2] Further, monitoring impacts will be important to determine if policy goals are being met and to identify unintended consequences more quickly.

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Notes

[1] (a) Health Canada has recommended a ban on smoking in multi-unit housing. (https://www.canada.ca/en/health-canada/programs/future-tobacco-control/future-tobacco-control.html).

(b) Real scenario: Consider a mom with 2 young children in an apartment complex. A neighbour is (legally) smoking pot in their suite. It is coming into her suite and believes it is negatively affecting her and her 2 small children. She is on a limited budget and does not have the resources to move. The landlord tells her that the neighbour is doing nothing wrong and police advise her there is nothing illegal about it. She has read the public health information and knows about the potential harms of cannabis. She then calls the municipality. Municipalities will need to have mechanisms in place to handle the potential increase in cannabis-related calls and mitigation strategies to address the complaints.

[2] Many preschools and childcare facilities are already located in strip malls adjacent to liquor outlets (bars or liquor stores). Cannabis stores should not be allowed to be located within a shopping complex that has any type of childcare facility.

Childcare programs in Alberta as of June 2017

Type	# of regulated spaces	% of spaces	# of programs/locations	% of programs	% of locations
Day care	47,155	39.9%	842	18.8%	33%
Day home	11,773	10.0%	67 agencies with est. 1,962 locations (Based on 6 children per home)	3%	43.8%
Pre-school	17,699	15%	686	27%	15.3%
Out of School	40,817	34.6%	958	37%	21.4%
Innovative childcare program	604	0.5%	22	1%	0.5%
Group family childcare program	40	0.03%	5	0%	0.1%
Total	118,088		4,475		

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Alberta Health Services

A Public Health Approach[1] to Cannabis Legalization

A public health approach strives to maximize benefits and minimize harms of substances, promote the health of all individuals of a population, decrease inequities, and ensure harms from interventions and legislation are not disproportionate to harms from the substances themselves.

A public health lens to cannabis legalization also involves taking a precautionary approach to minimize unintended consequences. This precautionary approach helps minimize unintended consequences, especially when evidence is incomplete and/or inconclusive. In addition, , it is easier to prevent future harms, by removing regulations in the future once more knowledge exists, than it is to later add regulation. [1]

Canadian Drug Policy Coalition, www.drugpolicy.ca, concept from John Marks.

- The outcome of a public health approach shows how health/social harms and supply/demand are related.
- Harms related to substances are at a maximum when governance and control are at the extremes. Note that harms are similar to prohibition if commercialization/privatization is at the extreme.
- Lower health and social harms occur when a public health approach is used. (Note: the curve doesn't go to zero—there are always problems associated with substance use, but they can be minimized).
- Legalizing cannabis without considering the key elements of a public health approach may result in greater social and health harms.

Key considerations when developing policy from a public health lens includes:

- Minimizing harms
- Protecting health and safety of citizens
- Preventing the likelihood of use and problematic use
- Assessing population health outcomes
- Providing services
- Addressing the determinants of health and health equity

[1] Chief Medical Officers of Health of Canada & Urban Public Health Network. (2016). *Public health perspectives on cannabis policy and regulation.* Available from http://uphn.ca/wp-content/uploads/2016/10/Chief-MOH-UPHN-Cannabis-Perspectives-Final-Sept-26-2016.pdf

Alberta Health Services

ADDITIONAL RESOURCES:

- Alberta Health Services – Public Health Perspectives on Cannabis
  https://drive.google.com/drive/folders/0B6lL8pRONuu_UDB6WTBnU2lNRmc
- Chief Medical Officers of Health of Canada & Urban Public Health Network (2016) http://uphn.ca/wp-content/uploads/2016/10/Chief-MOH-UPHN-Cannabis-Perspectives-Final-Sept-26-2016.pdf
- University of Calgary Evidence Series
  https://open.alberta.ca/dataset/0239e5c2-5b48-4e93-9bcc-77f72f7bdc5e/resource/021d8f84-5d8b-4e21-b0bb-81340d407944/download/AHTDP-Cannabis-Evidence-Series-2017.pdf
- The Federation of Canadian Municipalities
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  - https://www.camh.ca/en/hospital/about_camh/influencing_public_policy/documents/camhcannabispolicyframework.pdf
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  - http://www.ccsa.ca/Resource%20Library/CCSA-National-Research-Agenda-Non-Medical-Cannabis-Use-Summary-2017-en.pdf
- Canadian Paediatric Society: http://www.cps.ca/en/documents/position/cannabis-children-and-youth
- Canada's Lower-Risk Cannabis Use Guidelines
  http://www.camh.ca/en/research/news_and_publications/reports_and_books/Documents/LRCUG.KT.PublicBrochure.15June2017.pdf
- Drug Free Kids Canada
  https://www.drugfreekidscanada.org/
- AHS Medicinal Marijuana Series
  https://www.youtube.com/playlist?list=PL4H2py77UNuXVGFm2qbI288PDA4LcJg9z
- Government of Alberta & Government of Canada
  - https://www.alberta.ca/cannabis-legalization.aspx
  - https://www.canada.ca/en/services/health/campaigns/legalizing-strictly-regulating-cannabis-facts.html
- Rethinking Access to Marijuana
  http://www.lacountyram.org/uploads/1/0/4/0/10409636/ram_cb_inlayout4.pdf
- Canadian Medical Association Journal: http://cmajopen.ca/content/5/4/E814.full

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PUBLIC HEALTH PERSPECTIVES ON CANNABIS LEGALIZATION IN ALBERTA

Written Submission to:
Alberta Cannabis Secretariat

Submitted on behalf of AHS by:
Dr. Gerry Predy, Senior Medical Officer of Health/Senior Medical Director–Population, Public and Indigenous Health

Date: July 31, 2017

PUBLIC HEALTH APPROACH

Alberta Health Services (AHS) supports an evidence-based public health approach to the development and implementation of legislation for the legalization and regulation of cannabis in Alberta. This means promoting and protecting the health of Albertans, and considering the impact on the health of our most vulnerable populations.

A public health approach strives to maximize benefits and minimize harms of substances, promote the health of all individuals of a population, decrease inequities, and ensure harms from interventions and legislation are not disproportionate to harms from the substances themselves. [1] The outcome of a public health approach (see Figure 1) shows how health/social harms and supply/demand are related. Harms related to substances are at a maximum when governance and control are at the extremes. Lower harms occur when a public health approach is used.

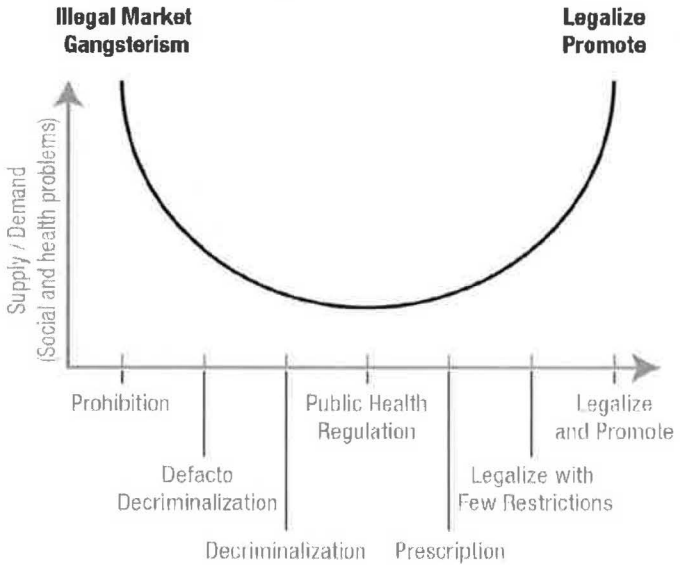

Figure 1. "The Paradox of Prohibition" Marks (1990) [1]

Legalizing cannabis without considering the key elements of a public health approach is likely to result in greater social and health harms. Key considerations when developing policy from a public health lens includes:

- Minimizing harm
    - Consider the risks of cannabis use including the risks of harms to youth, risks associated with patterns of consumption (e.g., frequent use, co-use with alcohol and tobacco, harmful routes of consumption, consumption of concentrated products, increases in proportion of population consuming), and risks to vulnerable populations (e.g., youth, people with mental health problems, pregnant women, socio-economically disadvantaged populations).
- Protecting the health and safety of Albertans
    - Carefully consider evidence related to the public consumption of cannabis, workplace safety, and the scientific and legal issues associated with impaired driving.
- Preventing the likelihood of use and problematic use
    - Ensure early and on-going public education and awareness that seeks to delay use by young people, and prevent normalization.
- Assessing population health outcomes
    - Include baseline understandings of current situation; potential impact of policies and programming; disease, injury and disability surveillance (effects on society).
- Providing services
    - To assist those who are most at risk of developing or have developed substance use issues, expand access to treatment and prevention programs.
    - Consider the ongoing public health costs and ensure that public health programs are adequately resourced to address the risks.
- Addressing the determinants of health and health equity
    - Consider issues of social justice, racism, human rights, spiritual and cultural practices, as well as populations vulnerable to higher risk of cannabis-related harms.
    - Complete a health equity impact assessment to ensure unintended consequences of legalization are minimized.

It is also critical to begin conservatively and establish more restrictive regulations as it is very difficult to tighten regulations once in place. As there is little research on the impact of legalization on health and social outcomes, proceeding cautiously with implementation will help ensure that the promotion and protection of the health and safety of Albertan remains the priority.

As recommended by the Chief Medical Officers of Health of Canada, [1] the overarching goal to this legislation should be to improve and protect health—maximizing benefits, minimizing harms, promoting health, and reducing inequities for individuals, communities and society. This goal needs to be applied at every stage of the policy development process.

HARMS OF USE

While there is evidence that there is less impact on public health than alcohol and tobacco, cannabis still has significant health risks which include increased risk of some cancers, mental health issues, and

functional changes (e.g., memory loss) as well as social effects such as impaired driving. [2,3,4] These health risks are more prevalent with frequent (daily or near-daily) and early age use. Recent research has reported significant increases in marijuana-related hospitalizations, emergency department visits, and calls to the regional poison center following legalization of marijuana in Colorado. [5] Many reports also identify cannabis use being associated with an increased risk of motor vehicle collisions. [6,7,8]

In addition, there are disproportionate impacts among vulnerable populations that need careful consideration. Lower-risk guidelines for cannabis use should be adopted as outlined by Fischer et al. (2011)[9] focusing on populations that are more vulnerable to poor health outcomes such as youth, those with lower literacy and education, as well as gender specific populations. These lower risk guidelines [10] have been endorsed by the Centre for Addiction and Mental Health, Canadian Public Health Association, Canadian Medical Association, Canadian Society of Addiction Medicine, Council of Chief Medical Officers of Health, and Canadian Centre on Substance Use and Addiction.

Research and evidence related to cannabis-impaired driving, brain development, dependence, mental health, chronic diseases (respiratory and cardiovascular), co-disease, co-occurring other drug use, passive exposure to smoke, among other issues, should also be considered in the development of cannabis legislation and regulation. Some specific evidence includes:

- Brain development – evidence suggests using cannabis in early adolescence can cause adverse effects to the developing brain and are at greater risk for long term cognitive impairments. [11,12,13] While more research is needed in this area, there are reports that early, regular use is associated with higher risk of dependency, higher risk of health harms, and low levels of educational attainment. [14,15,16,17]
- Dependence – The risk of dependency is a concern. It is reported that the global burden of cannabis dependence was 13.1 million people in 2010 (0.20%), and that dependence is greater among males and more common in high-income areas (compared to low-income areas).[18] In addition, researchers In the U.S. indicate that the prevalence of lifetime dependence is approximately 9% among people that had used cannabis at least once. [19]
- Chronic Disease – Consumption of combusted cannabis is associated with respiratory disease such as a chronic cough. Other significant concerns that require further research include chronic obstructive pulmonary disease, asthma and lung cancer. Cannabis consumption, both inhaled and ingested affects the circulatory system, and there is some evidence associating cannabis with heart attacks and strokes.[20]
- Mental health – Research suggests that cannabis users (mostly frequent and high potency use) are at greater risk of developing mental health problems such as psychosis, mania, suicide, depression, psychosis or schizophrenia. [21,22] For example, it is reported that there is a 40-50% higher risk of psychosis for people with a pre-existing vulnerability than non-users. [23]
- Passive exposure – Second-hand cannabis smoke is more mutagenic and cytotoxic than tobacco smoke, and therefore second-hand inhalation of cannabis should be considered a health risk. [24,25,26]
- Driving -- Substantial evidence shows a link between cannabis use and increased risk of motor vehicle collisions. [27,28] More research is needed to understand the association between THC levels and impairment, thus any limits set should be re-evaluated as evidence becomes available. In

addition, concerns about the reliability of current roadside testing technology has been expressed by many organizations and researchers. As such, investment for research related to impairment testing technology should be included in the implementation plan. A public education campaign about the risk of driving after consuming or smoking any cannabis or while impaired will be critical throughout the implementation of this legislation. This will be particularly important for youth, as the Canadian Paediatric Society reports that cannabis-impaired driving is more common than alcohol-impaired driving and youth are less likely to recognize driving after consuming cannabis as a risk.[29]

HEALTH PROTECTION AND PREVENTION

Age of use. Researchers and public health organizations are in agreement—there is no safe age for using cannabis. Delaying use is one of the best ways to reduce the risk of harm to the developing brain. Scientifically-based minimum age recommendations are generally early-to-mid-20's but also recognize that a public health approach includes consideration for balancing many variables related to enforcement, the illicit market and public acceptance. Some public health organizations recommend the minimum age be set at 21 and others recommend bringing alcohol, tobacco and cannabis in alignment. Experience with tobacco has shown that there is a higher impact on initiation by persons under 15 and age 15-17 when setting the minimum age of purchase and possession at 21 versus 19 (Institute of Medicine in US). With the U.S. states who have legalized cannabis, all have chosen age 21 for cannabis minimum age and three states and over 230 cities/counties have implemented age 21 for tobacco. Cannabis legalization represents an opportunity for Alberta to consider raising the tobacco and alcohol minimum age.

Packaging/labelling. Plain, standardized and child-proof packaging is recommended to decrease the appeal to young people and avoid marketing tactics that make cannabis use attractive. Labelling should include health warnings and clearly defined single serving/dose information.

Marketing and promotion. Evidence has shown that advertising has a significant impact on youth health risk behaviours, [30] therefore promotion of cannabis use should be banned. Restrictions for marketing and promotion should follow the Alberta Tobacco and Smoking Reduction Act, with further consideration added such as movies, video games, online market, social marketing and other media accessible to and popular with youth. It is also important to note that language to describe cannabis can have a marketing affect. Therefore, as noted by the Chief Medical Officers of Health of Canada, the term "recreational" should not be used as this infers that cannabis use is fun. A more appropriate term is "non-medical."

Distribution and retail. A government controlled system of distribution and retail would be most effective to ensure that public health goals (not profit) are the primary consideration for policy development. Taxation and other price controls should be appropriate to limit consumption and off-set the illegal market. Tax revenues should be directed to support services impacted by legalizations including health, public safety, addictions and mental health services, prevention, and public

education. Co-location with alcohol or tobacco is not recommended and retail outlets should be non-promoting. Limits to density and location of retail stores is essential, including proximity to schools, community centres, residential neighbourhoods, youth facilities and childcare centres. While online and home delivery may be suitable for medical cannabis, there are many regulatory challenges and risks to public health for non-medical cannabis. Finally, training and education programs should be developed to ensure well-trained and knowledgeable staff. AHS is a key partner to help lead the development of this training.

Public consumption. The research regarding negative harms due to passive exposure of smoke is clear. [31,32,33] Passive exposure to cannabis smoke can result in a positive test for cannabis and sometimes causes intoxication. Therefore, public smoking and vaping should not be permitted. [34] It is recommended that regulations similar to the Tobacco and Smoking Reduction Act, which includes a ban on water pipe smoking in establishments and e-cigarette use in public areas. This also suggests banning cannabis lounges/cafes as these facilities would expose people to second-hand smoke, promote renormalizing smoking, present occupational health issues, and reverse some of the progress made with public smoking bans. Additional considerations to protect public health include exploring policy options to address smoke-free multi-unit housing.

Public education. Evidence-informed public education is critical to promoting and protecting the health and wellbeing of Albertans. The potential, particularly for youth, to hear "mixed messages" about cannabis use requires the development, implementation and evaluation of a more nuanced set of health promotion and harm prevention messages and interventions to support people in their decision-making around cannabis use.[35] Alberta Health Services can play a major role in public education, applying its significant experience in developing and implementing education and awareness campaigns. It will be critical to work with partner organizations and audiences particularly youth and those who are current users of cannabis to implement evidence-informed health promotion messaging that includes (but not limited to): delay of use, effects of use/co-use, long-term impact, reliable information sources, harm reduction, edible versus smoking effects, pregnancy and effects on fetus, medical and non-medical cannabis differences, workplace safety, impaired driving, culturally appropriate messaging, health impacts and youth-focused messaging.

Addiction and treatment services. Strengthening treatment services for people with substance use issues and mental health disorders will be necessary as these treatment systems are already under resourced which in turn have significant health and social consequences. For example, the Alberta Mental Health Review in 2015 reported that almost half of Albertans said that at least one of their needs was not met when they attempted to get assistance for addiction and mental health issues. [36] It is anticipated that there will be an increase in demand to address problematic cannabis use and for that reason investments in evidence-based interventions will be needed. [37,38] It will also be necessary for those who use cannabis for medical purposes to have access to accurate, reliable information such as indicators, adverse effects, methods of use and risk reduction.

ASSESSMENT, SURVEILLANCE AND RESEARCH

Currently, reliable cannabis-related research and evidence is limited. Therefore, dedicated funding and resources will be needed to ensure proper monitoring and surveillance, and improve the body of research and evidence related to cannabis use and the impact of legalization.[39]

While there have been several other jurisdictions who have recently implemented legislation to legalize cannabis, many have faced significant challenges in implementing effective evaluation programs. Lessons learned from these jurisdictions will be critical to determining baseline measures and selecting indicators for ongoing surveillance.[40] A consistent approach, working across all provinces and territories, is central to measuring impact and providing comparable data. [41,42] In Canada, there have already been some efforts to establish this coordinated approach including Health Canada's Annual Cannabis Use survey and Canadian Institutes for Health Research's (CIHR) catalysts grants. Not only is this national view important, but a provincial collaborative approach is needed. This would require a coordinating body to ensure municipal, provincial and federal research and evaluation efforts are well-coordinated.

OTHER RECOMMENDED REPORTS/POSITIONS

It is highly recommended that the Alberta government considers the information and recommendations from the following:

- Chief Medical Officers of Health of Canada & Urban Public Health Network (2016)
  http://uphn.ca/wp-content/uploads/2016/10/Chief-MOH-UPHN-Cannabis-Perspectives-Final-Sept-26-2016.pdf
- Toronto Medical Officer of Health (2017)
  http://www.toronto.ca/legdocs/mmis/2017/hl/bgrd/backgroundfile-104495.pdf
- Canadian Public Health Association (2016)
  https://www.cpha.ca/sites/default/files/assets/policy/cannabis_submission_e.pdf
- Centre for Addiction and Mental Health (2014)
  https://www.camh.ca/en/hospital/about_camh/influencing_public_policy/documents/camhcannabispolicyframework.pdf
- Canadian Centre for Substance Use and Addiction
  - http://www.ccsa.ca/Resource%20Library/CCSA-Non-Therapeutic-Marijuana-Policy-Brief-2014-en.pdf
  - http://www.ccsa.ca/Resource%20Library/CCSA-Cannabis-Regulation-Lessons-Learned-Report-2015-en.pdf
  - http://www.ccsa.ca/Resource%20Library/CCSA-National-Research-Agenda-Non-Medical-Cannabis-Use-Summary-2017-en.pdf
- Ontario Public Health Association
  http://www.opha.on.ca/getmedia/6b05a6bc-bac2-4c92-af18-62b91a003b1b/The-Public-Health-Implications-of-the-Legalization-of-Recreational-Cannabis.pdf.aspx?ext=.pdf
- Canadian Paediatric Society
  http://www.cps.ca/en/documents/position/cannabis-children-and-youth

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[8] National Academies of Sciences, Engineering, and Medicine. (2017). *The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research.* Washington, DC: The National Academies Press. Available from https://www.nap.edu/catalog/24625/the-health-effects-of-cannabis-and-cannabinoids-the-current-state

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Cannabis Regulation: Lessons Learned in Colorado and Washington State

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Cannabis Regulation: Lessons Learned in Colorado and Washington State

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Executive Summary

In November 2012, Colorado and Washington state became the first two US states to legalize the personal possession and retail sale of cannabis. The two states developed regulatory frameworks with many common features (e.g., minimum purchase age of 21, ban on public use), and some key differences. For example, Washington bans personal production, while Colorado permits up to five plants per household. The two states began with different contexts: Colorado had a well-established, regulated medical distribution system to build on, and Washington had no existing regulated supply. Retail sales began on January 1, 2014, in Colorado and on July 8, 2014, in Washington.

To learn from evidence and experience about the legalization of cannabis for non-therapeutic use and its health, social, economic and public safety impacts, the Canadian Centre on Substance Abuse (CCSA) led delegations to Colorado (February 2015) and Washington state (August 2015). The delegations consisted of partners from public health, treatment and enforcement sectors. The goal was to inform the ongoing dialogue about policy options for the regulation of cannabis in Canada and internationally by observing the effects of the various models and approaches in the two states. The aim was not to take a position on the question of legalization, but to collect the best available information to support evidence-informed policy advice. To this end, the delegation met with stakeholders from a range of perspectives, including public health, regulation, government, enforcement, prevention and the cannabis industry.

The overarching lesson that emerged during discussions with stakeholders was that any jurisdiction considering policy change should **identify a clear purpose to drive the overall approach**. In other words, begin by defining the problem to be solved and the goals to be achieved.

Colorado and Washington had to **develop a comprehensive regulatory framework** taking a substance from criminal prohibition to retail sales. Any new regulatory system for cannabis needs to address considerations across health, public health, enforcement, criminal justice, social and economic sectors. It must account for the administration, monitoring and enforcement of all processes, including production, processing, sales, advertising and taxation. The framework also has to coordinate federal, state, district and municipal orders of government, and their respective roles in such areas as enforcement, taxation and health care. The CCSA delegation learned the following key lessons about developing a regulatory framework from stakeholders:

- **Reconcile medical and retail markets** to promote consistency in such areas as purchase quantities and administration, and to reduce the scope of the grey market, which is the market for products produced or distributed in ways that are unauthorized or unregulated, but not strictly illegal;
- **Be prepared to respond to the unexpected**, such as the overconsumption of edibles in Colorado and an unmanageable volume of licensing applications within a limited timeframe in Washington state;
- **Control product formats and concentrations** to ensure there are no unanticipated consequences from unregulated formats and concentrations;
- **Prevent commercialization** through taxation, rigorous state regulation and monitoring, and controls on advertising and promotion; and
- **Prevent use by youth** by controlling access and investing in effective health promotion, prevention, awareness and education for both youth and parents.

The need to **invest in effective implementation** was a common message of stakeholders in both Colorado and Washington. They highlighted the value of allocating a portion of funds generated through retail sales to education, prevention, treatment and research. They also emphasized the need to ensure proactive investment to build capacity before the new regulations are implemented and retail sales begin. These investments fall into several common themes:

- **Take the time required to develop an effective framework for implementation** and to prepare for a successful launch;

  (Colorado stakeholders recommended taking longer than the one-year period provided in that state. There is also a need to give retailers time to develop capacity to meet consumer demand. Washington stakeholders encountered price escalation as retailers struggled to obtain or produce product within two months of receiving licenses.)

- **Develop the capacity to administer the regulatory framework**, recognizing that a significant investment in staff and administration is required to process licenses, conduct comprehensive inspections and address violations;

- **Provide strong central leadership and promote collaboration** to bring diverse partners to the table from the beginning and to promote open, consistent communication and collaborative problem-solving;

- **Invest proactively in a public health approach** that builds capacity in prevention, education and treatment before implementation to minimize negative health and social impacts associated with cannabis use;

- **Develop a clear, comprehensive communication strategy** to convey details of the regulations prior to implementation, so that the public and other stakeholders understand what is permitted, as well as the risks and harms associated with use, so that individuals can make informed choices;

- **Ensure consistent enforcement of regulations** by investing in training and tools for those responsible for enforcement, particularly to prevent and address impaired driving and diversion to youth, and to control the black market;

- **Invest in research to establish the evidence base** underlying the regulations, and to address gaps in knowledge, such as new and emerging trends and patterns of use; and

- **Conduct rigorous, ongoing data collection**, including gathering baseline data, to monitor the impact of the regulatory framework and inform gradual change to best meet policy objectives and reduce negative impacts.

In summary, the consistent message CCSA heard was that any jurisdiction considering regulatory changes to cannabis policy should take the time to set up the infrastructure and allocate the resources needed to get it right, assess impacts along the way and make incremental changes, as needed.

CCSA would like to thank the Colorado and Washington stakeholders and Canadian delegation members for their generous contributions of time, expertise, information and advice.

Objective

The Canadian Centre on Substance Abuse (CCSA) is Canada's only national agency dedicated to reducing the harms of alcohol and other drugs on society, informing policy and practice, and improving services, supports and care for those suffering from substance use disorders.

To this end, and in light of ongoing dialogue about the impacts and policy options for the regulation of cannabis[1] in Canada and internationally, CCSA coordinated visits with partners to Colorado and Washington state in February and August, 2015, about a year after retail sales of cannabis were implemented in each state. These visits brought senior CCSA leadership and subject-matter experts, and partners from public health, treatment and enforcement to meet with diverse stakeholders to learn from evidence and experience about the health, social, economic and public safety impact of cannabis legalization.[2] The purpose of these visits was not to arrive at a position on the question of legalization, but to ensure that CCSA has the best available information with which to provide evidence-informed policy advice on the issue of cannabis regulation in a timely way.

CCSA has produced this report to summarize the key themes and lessons learned during the two visits. The report is based on the notes recorded and input provided by delegation members.

Background

Legislative approaches to regulating cannabis fall along a continuum, with criminal prohibition, the currently dominant model in Canada and internationally, at one end and unrestricted access and free market production at the other (see Appendix D). The question of how cannabis should be regulated has recently been raised at both national and international levels. It was an issue in Canada's recent federal election, and has been raised by the United States Office of the Attorney General and at the 58th session of the United Nations Commission on Narcotic Drugs. Despite a great deal of dialogue, a lack of clarity remains about the differences between decriminalization, legalization and commercialization of cannabis, and the various regulatory options and models within each category (Canadian Centre on Substance Abuse, 2014).

Cannabis is illegal for retail sale at the federal level in the United States, as it is in Canada. However, 23 states and the District of Columbia have passed legislation allowing medical use, and four states (Colorado, Washington state, Oregon and Alaska) and the District of Columbia have passed legislation allowing retail sales.

The discrepancy between the status of cannabis with the federal and state orders of government creates significant challenges. Because cannabis remains a scheduled substance at the federal level, the state is forced to take responsibility for regulations, inspections and enforcement normally handled by federal departments and agencies such as the Food and Drug Administration or the Department of Agriculture. This situation also prevents normal banking operations, resulting in a primarily cash-based industry with corresponding safety and administrative issues. Although banking capacity has developed to an extent in Washington through smaller credit unions, transactions are limited to the production level and retail sales remain cash-based. The discrepancy also creates

1 The terms "cannabis" and "marijuana" both refer to the dried flowers, fruiting tops and leaves of *Cannabis sativa*. CCSA uses the term cannabis; this report uses the term marijuana when it is part of a formal title such as the Office of Marijuana Coordination.

2 Appendix A provides a list of the CCSA delegation members, Appendix B a list of Colorado stakeholders, and Appendix C a list of Washington State stakeholders. Stakeholders were identified through a combination of referrals from existing networks, suggestions from contacts as they were made in each state, and targeted searches for individuals in key roles representing the broad range of perspectives sought (e.g., public health, enforcement, administration, regulation, government, industry, prevention, treatment).

jurisdictional challenges for enforcement. For example, in Washington state the federal Coast Guard is responsible for enforcing federal laws — under which cannabis is illegal — on navigable waterways and for public safety on ferries and other vessels travelling between the mainland and islands; however, federal ferries are the only means of transportation available to some islands within Washington state.

The first two states to legalize the personal use and possession of cannabis for non-therapeutic purposes were Colorado and Washington state, which passed Amendment 64 and Initiative I-502 respectively in November 2012. Table 1 compares key components of the new regulations in the two states.

Colorado began retail sales on January 1, 2014, by permitting existing licensed medical distributors to transfer to non-therapeutic sales. This approach leveraged Colorado's existing framework for medical cannabis, which included state licensing. Retail licensing expanded to new retailers in October 2014. Licenses must be approved by both the Marijuana Enforcement Division of the Department of Revenue and relevant local licensing authorities, the latter of which have the authority to prohibit retail sales altogether. Of Colorado's 321 local jurisdictions, only 72 had allowed retail sales as of December 2014 (Brohl, Kammerzell, & Koski, 2015).

Washington state began retail sales under the supervision of the Washington Liquor Control Board on July 8, 2014. Initial licensees were drawn from a pool of suitable applicants in May 2014. This two-month time period for the licensees to produce or obtain stock and establish points of sale resulted in limited initial retail capacity with a gradual scale-up over subsequent months. As in Colorado, municipal authorities can impose restrictions from hours of operation to caps on the number of retail outlets up to complete bans on sales. Although Washington state did not have a regulated medical market, unregulated retail sales were taking place, with over one hundred distribution centres in Seattle alone.

Table 1: Summary of Colorado and Washington Regulatory Frameworks

	Colorado	Washington state
Age restrictions	21 or older	21 or older
Personal possession	1 oz or its equivalent	A combined maximum of: 1 oz dried product 16 oz infused solid product 72 oz infused liquid product 7 g concentrates
Personal production	Up to 6 plants (maximum 3 mature) that must be in an enclosed, locked space	Not permitted
Licensing body	Colorado Department of Revenue	Washington State Liquor and Cannabis Board
Taxation	15% excise; 10% sales + municipal taxes (approx. 30% of total price)	Prior to July 1, 2015: 25% excise tax at each of production, processing and retail sale stages + state and local sales taxes (approx. 50% of total price) As of July 1, 2015: 37% excise tax + state and local sales tax
Forms of sale	Dried marijuana, extracts and infusions	Dried marijuana and infusions
Residency restrictions	Purchase limit of ¼ oz for non-residents Retailers and producers must have lived in the state for 2-years	Retailers and producers must have lived in the state for 3-months
Driving restrictions	5 nanograms/ml THC in whole blood	5 nanograms/ml THC in whole blood
Public use	Not permitted	Not permitted

The Colorado and Washington state approaches to medical marijuana also form an important part of the regulatory context. Although both states permit the use of marijuana for therapeutic purposes, they differ greatly in terms of the existing degree of state regulation.

Colorado's medical market underwent significant expansion in 2009 after a successful court challenge created an opportunity to set up medical cannabis distribution centres. The *Colorado Medical Marijuana Code* was subsequently passed in 2010, establishing statewide regulations governing the use and sale of cannabis for medical purposes (Office of the State Auditor, 2013). As of January 1, 2014, 493 medical distribution centres had been opened (Brohl et al., 2015). The number of medical cards issued also subsequently increased from 5,051 in January 2009 to 111,031 in January 2014 (Light, Orens, Lewandowski, & Pickton, 2014). Colorado's medical market therefore served as a foundation for the retail model by providing a network of established, licensed producers and retailers.

Conversely, although Washington state has permitted the use, possession, sale and cultivation of cannabis for authorized patients since 1998, the state had not established comprehensive regulations governing distribution or patient registration. Regulations were limited to authorized medical conditions and limits were set for the quantity of plants or product allowed in an individual's possession. Washington is currently in the process of implementing regulations that will bring medical distribution into alignment with the retail system, which will be addressed later in this report.

Lessons Learned

The CCSA delegation met with a number of individuals and organizations representing a broad spectrum of perspectives, including regulation, enforcement, public health, cannabis industry, research, data collection and treatment, and advocates on both sides of the legalization debate (see appendices B and C). Many stakeholders identified the importance of beginning by clearly identifying the problem to be solved and focusing regulation, messaging, data collection and implementation accordingly.

Several consistent lessons learned through the legalization experience in Colorado and Washington state emerged over the course of the consultations, and there were key messages that tied these lessons together. Stakeholders in both states emphasized the importance of taking the time and making the proactive investments needed for a strong and comprehensive regulatory framework. That framework should include the infrastructure needed to address public health and safety concerns such as cannabis use among youth and cannabis-impaired driving. Also before legalization, a jurisdiction should gather comprehensive baseline data and after legalization continue ongoing research and data collection on the health and social impacts of cannabis use.

Identify a Clear Purpose to Drive the Overall Approach

The CCSA delegation heard the old catchphrase "the devil is in the details" many times during its consultations. Identifying clear policy goals is an important way to ensure that regulatory details provide a consistent strategic approach and provide measures against which to monitor and evaluate progress and impact. The legalization of cannabis is often promoted as a way to reduce the black market and the role of organized crime, reduce the impact of criminal charges on those apprehended for possession, improve product safety and generate tax revenue. Depending on how these goals are prioritized, details such as taxation structure can vary considerably. For example, if the goal is to price out the black market, the taxation structure will be set up differently than if the goal is to generate state revenue.

Develop a Comprehensive Regulatory Framework

The challenge of developing an entirely new framework for regulating a previously illegal substance cannot be underestimated. As illustrated in Table 1, there is a great deal of consistency in the Colorado and Washington approaches, as well as some key distinctions. This section outlines the key themes that emerged about establishing the regulatory framework.

Reconcile medical and retail markets

Stakeholders in both Colorado and Washington state remarked on the challenges associated with the co-existence of retail and medical markets. In both states, the pre-existing medical regulations create a system of dual standards (e.g., different minimum ages, purchase quantities, growth restrictions, and taxation levels) and contribute to the grey market, which is the market for products produced or distributed in ways that are unauthorized or unregulated, but not strictly illegal. The grey market associated with personal production is especially difficult to regulate and enforce. For example, Colorado's Amendment 64 allows medically authorized individuals to produce up to six plants for personal use, and designated caregivers can grow up to six plants for up to five people, as well as for themselves. Stakeholders identified that plants grown within this market constitute about one-third of the total supply, and pose a high risk for diversion both to youth and to out-of-state destinations.

Stakeholders emphasized the importance of distinguishing between cannabis' function as a medical substance and as a recreational substance. When that function is medical, stakeholders agreed that cannabis should be treated as such in terms of dosage, guidelines, production, distribution and product configuration (i.e., it should not be supplied in candy form). Several stakeholders noted that there was a need for healthcare professionals to have a stronger voice in the regulatory system. They highlighted the lack of conclusive research in some areas and the dual medical–recreational function of cannabis as barriers to engaging the health field more strongly.

In Colorado, although the medical market is currently larger than the retail market, trend data suggests the gap is closing (Brohl et al., 2015). There are incentives for both options. Using the retail market eliminates the burden of renewing a medical card every year. However, when purchasing with a medical card, the price is lower because of lower taxes. Further, youth between the ages of 18 and 21 can access cannabis for medical use, and youth below the age of 18 can access cannabis for medical use with parental approval. Examining the extent to which individuals approved to access cannabis for medical use choose to change to the retail market will contribute to understanding possible interactions between the two markets and overall impacts on rates of use.

Washington state is in the process of introducing regulations that will bring the medical market into alignment with the retail market. Because medical distribution centres are currently unlicensed, there is no accurate data on their number; however, estimates indicate 100 to 300 in the Seattle area alone and 500 to 800 state-wide. Senate Bill 5052, passed in September 2015, requires that all retail outlets obtain licenses through the Washington Liquor and Cannabis Board. A special endorsement will be required to allow the provision of authorized medical users with tax exemptions, higher purchase quantities and a lower purchase age of 18 years.[3] All dispensaries are required to be licensed by July 2016. Washington state is not placing a cap on the number of new permits issued, and is prioritizing dispensaries established prior to January 1, 2013 in the licensing process. The Washington State Economic and Revenue Forecast Council estimates that bringing the medical market into state regulation will close to double sales revenue and market share.

Be prepared to respond to the unexpected

Stakeholders agreed that despite best efforts in proactively identifying challenges, there are always surprises. Regulatory frameworks therefore need to be flexible and agile enough to adapt to these surprises and mitigate potential harms. Stakeholders also agreed that moving gradually and decreasing the restrictiveness of regulations is easier than increasing them, so they recommended beginning with a more restrictive framework and easing restrictions as evidence indicates.

Colorado's experience with edible cannabis products illustrates the importance of this theme. Sales of cannabis edibles is the one area in which retail cannabis sales overtook medical, with 2.85 million and 1.96 million units sold, respectively (Brohl et al., 2015). Initial regulations set a maximum dosage for edible products, but did not specify how that dosage was to be distributed relative to serving size. Many producers packaged edibles with several doses in what most consumers would consider one serving of a product; for example, a single brownie could contain up to ten doses. Cannabis ingested in edible form can also take over an hour to produce psychoactive effects, introducing a higher risk for overconsumption among naïve users.

Several high-profile overdoses from consuming edible forms of cannabis generated media attention, and a task force was struck in April 2014 to revisit the regulations. New regulations were introduced in February 2015 requiring edible products to be separated into doses of 10 mg of tetrahydrocannabinol

[3] Detailed requirements and regulations for this endorsement remain in development at the time this report is being written.

(THC) or less. The new regulations created significant losses for producers who had to change manufacturing processes and dispose of products that did not meet the new regulations.

Washington stakeholders noted the unexpected volume of applications received for the initial lottery-based licenses. In hindsight, a rolling rather than fixed application period would have distributed the volume over a longer period of time, allowing more time to review and work with applicants to ensure that those provided with license opportunities could meet all criteria. Washington also made a significant change to its taxation approach. The initial tax structure imposed a 25% tax at each stage of production, processing and sale. This structure prevented retailers from claiming the taxes as a business expenditure when filing their own corporate taxes. The state has therefore shifted to a 37% tax imposed at point of sale, and eligible for retailers to claim against revenue. This shift is not anticipated to reduce overall revenues generated for the state, or to increase costs to consumers.

Control product formats and concentrations

A theme that emerged in both Colorado and Washington was concern about the emergence of products containing high levels of THC, including both plants and extracts such as oils. Stakeholders from the public health and research communities in particular pointed out that there are gaps in knowledge about the long-term health impacts of consuming products with higher THC, and about trends in their use as surveys typically ask about smoking rather than other methods of use. There are also gaps in public education about the different effects and risks associated with the use of different formats; for example, the longer time of onset associated with edible versus smoked products.

The challenge faced in Colorado with packaging and dosage of edibles, as described previously, illustrates the unanticipated consequences for both consumers and producers of unregulated product formats. Several stakeholders also expressed continuing concern that many edible products are virtually identical to other candy or baked goods, and could be mistakenly ingested, particularly by youth, and supported more rigorous regulation of product formats. Stakeholders discussed several possible mechanisms for control, including limitations on THC concentration, imposing differential taxation levels according to THC concentration, and restricting product formats such as candies that might be more appealing to youth.

Prevent commercialization

Stakeholders agreed that avoiding commercialization, or the active promoting and marketing of cannabis, is the most important factor in preventing significant public health impacts such as those seen with the commercialization of alcohol and tobacco. Stakeholders suggested areas for particular attention, including taxation, a tightly controlled state distribution model, and strict regulations on advertising and promotion. Many stakeholders also recognized that the profit motives involved in a promising market are likely to attract corporate interests including or similar in nature to "big tobacco," with a corresponding concern that profit motives will overtake any concerns for individual or public health. These motives are supported by initial sales figures, totalling approximately $313M US in Colorado in 2014 and $260M US in Washington state from July 2014 to June 2015.

As a stakeholder in Washington remarked, commercialization is embedded in the economic culture of the United States. Colorado and Washington state are approaching this issue differently. Colorado is now moving away from a requirement for vertical integration from production to sale, and Washington is preventing vertical integration by allowing only retailers to hold retail licences, whereas producer and processor licences can be held concurrently. Monitoring the success of the various approaches being taken to limit the formation of large cannabis businesses in Colorado and Washington, as well as the states that have more recently introduced regulation, will provide valuable lessons learned.

Another lesson learned from research on the alcohol market is that consumption is directly related to availability. Some stakeholders expressed concern with the density of retail sales outlets, particularly in Denver, and with the location of some outlets relatively close to schools. Washington state has taken measures to prevent this problem from developing by applying caps on the number of licenses and developing regulations on location, including density and proximity to certain venues frequented by youth (e.g., schools). Some stakeholders remarked that these regulations drive locations to industrial and other areas that are inconvenient for customers to access.

Prevent use by youth

All stakeholders agreed that cannabis is not a benign substance and young people are at a higher level of risk for experiencing negative impacts. For example, heavy or regular cannabis use in early adolescence can have lasting effects on the developing brain (Porath-Waller, Notarandrea, & Vaccarino, 2015). There are indications that youth are more likely to use products in concentrated form with higher levels of THC and to use cannabis in combination with other substances. Several stakeholders expressed concern about advertisements, packaging and formats that are attractive to youth. As previously noted, stakeholders in Colorado expressed particular concern about products allowed on the markets that are formatted to mimic popular brand-name snacks and candies. Washington state regulations have not permitted edibles in "candy" form for retail sale, although they do exist in the unregulated medical market.

Stakeholders in both Washington and Colorado also agreed that reducing the negative impacts on youth should be a priority for any policy model. Acting on this priority includes closely monitoring youth rates of use and access to diverted product, and the health and social impacts on youth. The state must invest proactively in health promotion and prevention, and awareness and education for both youth and parents. Stakeholders pointed out the challenges in determining the impact on youth rates of use. For example, school surveys have not traditionally separated cannabis from other substances or asked about mode of use (e.g., smoking, edibles or vaping), and the methodologies of state and national youth surveys vary. These methodological variations result in different interpretations of impact depending on which data source and analytical approach are being used (Retail Marijuana Public Health Advisory Committee, 2015).

Invest in Effective Implementation

Developing a regulatory framework is only one piece of the puzzle. Implementing the framework and ensuring that there is the capacity and infrastructure needed to support it is also vital. Stakeholders particularly emphasized the need for proactive investment to build capacity **before implementation**, rather than waiting for revenues generated through taxation. This section outlines key themes that emerged about implementation.

Take the time required to develop an effective framework for implementation

Both Colorado and Washington experienced challenges with timing. Colorado had about one year to develop and implement a regulatory structure for retail production and distribution of cannabis. Stakeholders agreed that this was an aggressive timeline. A condensed timeline limits opportunities to engage stakeholders, collect data, conduct research, and ensure that regulatory agencies and other partners (e.g., enforcement and health professionals) can determine resource requirements and train staff. Stakeholders also pointed out that Amendment 64 outlined a framework within which they had to work, so they did not have the opportunity to craft regulations specifically to reflect available evidence on public health and safety impacts.

Washington waited an additional six months to implement, and many stakeholders felt that this provided a better opportunity to develop a comprehensive regulatory framework. The difficulty encountered in Washington was primarily with launching the retail market. Initial retailers had a period of only two months between license approval and the first legal sales date of July 8, 2015. Most retailers required additional time to produce or obtain product, establish locations and engage staff; resulting in limited product availability, price inflation and consumer frustration.

Develop the capacity to administer the regulatory framework

Stakeholders noted that regulatory bodies need to develop physical and human resources to administer the new regulations. Administration includes processing licence applications and renewals, conducting inspections, fielding complaints and addressing violations. In Colorado, for example, the Department of Revenue has taken on 55 new full-time employees to handle administrative and regulatory requirements. The City of Denver has added 37.5 full-time employees across sectors including administration, health, the coroner's office, public safety and emergency response.

Over the course of 2014, the Colorado Department of Revenue processed licenses for 322 retail stores, 397 retail cultivations, 98 product manufacturers and 16 testing facilities, as well as 77 denials, 30 suspensions, ongoing field inspections and other activities (Brohl et al., 2015). There are also costs associated with legal challenges by those denied licenses.

In Washington, the Washington State Liquor and Cannabis Board reported taking on 22 new full-time employees at a cost of $5M. From July 2014 to June 2015, the Board issued 131 producer, 275 processor and 161 retail licences. Stakeholders remarked that resources for inspections were limited and complaint-driven rather than proactive.

Provide leadership and promote collaboration

Stakeholders in both Colorado and Washington highlighted the value of central leadership to facilitate coordination and collaboration across the broad range of stakeholders involved in and affected by implementing cannabis regulations. In Colorado, the Governor's office created the Office of Marijuana Coordination with a leadership mandate. Stakeholders reported being involved to some degree on various working groups to develop, implement and amend regulations. They confirmed that this cross-sectoral approach was valuable for bringing all perspectives to the table from the beginning, generating consensus solutions to challenges, promoting consistency of information and avoiding conflict. From the administrative perspective, this approach smoothed implementation by ensuring ongoing communication across departmental divisions and enabling quick identification and attention to unintended impacts.

Stakeholders in Washington state pointed out that the absence of central leadership was a gap in the development of a regulatory framework in their state. Addressing that gap would have contributed to smoother implementation and improved understanding across sectors.

Invest proactively in a public health approach

One dominant rationale for cannabis legalization is the increased opportunity for a public health approach that includes prevention, education and treatment, in contrast with an enforcement approach focused on legal sanctions. A portion of sales revenue in both Colorado and Washington has been designated to support prevention and education initiatives. However, revenue-based funding by nature means a delay between the initiation of sales and the availability of funding, which results in limited resources prior to and early in the implementation stage — the period during which these initiatives are most needed. In addition, taxation revenue in Washington that was initially

earmarked for cannabis-related prevention, education, treatment, regulation and research has been reallocated to the general revenue stream, which reduces the funding available for public health.

A public health approach is comprehensive and stakeholders highlighted the need to build capacity across all system components that would be impacted by cannabis legalization. Stakeholders in Colorado in particular remarked on the importance of ensuring that resources are in place to address potential impacts on the health sector from emergency hospital admissions, poison control incidents and demand for treatment.

Stakeholders cautioned that lobbying by the cannabis industry could influence political decision making in favour of retail profit over public health. These concerns were more prominent in Colorado, where an established and coordinated industry presence has been part of the collaborative development process.

Develop a clear, comprehensive communications strategy

Stakeholders in both Colorado and Washington commented on the high level of public misunderstanding about the details of the legislation, both leading up to the initial vote and following the development of the regulatory framework. Clarity among the public about the legislation is important to reducing the health, social and public safety impacts. For example, people must know about possession and purchase limits, and restrictions on use in public and below the age of 21. Stakeholders emphasized the importance of communicating restrictions on cannabis-impaired driving and informing the public that police do have a scientifically validated method for testing for impairment.

Clear messaging about the risks and harms of cannabis use — integral to the public health approach — is important for reducing negative health impacts. Evidence indicates that the perception of harms associated with cannabis use is inversely related to rates of use among youth (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2015). Stakeholders pointed out that, to be perceived as credible, factual information about the health impacts of cannabis use must be conveyed in a way that is balanced and unsensational. They noted the value of drawing on lessons learned from campaigns against alcohol-impaired driving. Further, stakeholders highlighted the need for targeted communications to address specific risky behaviours, such as cannabis-impaired driving and use in combination with other substances including alcohol. Communications must also be developed to educate the public on the varied effects of different product formats and concentrations (e.g., delayed onset with edibles).

Ensure consistent enforcement of regulations

Stakeholders agreed there remains a strong role for enforcement under legalization, especially in areas such as driving while impaired, use in public, distribution to youth, and black market production and diversion. Enforcement stakeholders in Colorado, for example, remarked that they had observed an increase in the black market because of the increased ease of production and the profits associated with exporting to neighbouring states. Investing in education, training, analysis and investigative capacity is important to ensure consistent and effective enforcement of the regulations. Colorado stakeholders noted that adequate resources had not been invested to ensure access to the training required for effective and consistent enforcement. Several Washington stakeholders felt that frontline officers did not view enforcement of the regulations as a priority, which led to the normalizing of transgressions such as use in public. Colorado stakeholders pointed out the lack of labs for sample analysis as a significant obstacle, whereas Washington stakeholders emphasized that the availability of testing labs and the scaling up of impaired driving detection capacity before legalization had been especially beneficial.

Invest in research to establish the evidence base

Stakeholders in both Colorado and Washington pointed out that there are gaps in knowledge about patterns and impacts of cannabis use. Colorado stakeholders in particular identified that more time and resources would have enabled regulators to work with the health and research communities to gather existing scientific knowledge on the impacts of use, identify gaps and inform the regulatory framework. The legal status of cannabis has restricted access to it for research purposes, which has limited the ability to collect evidence on the impacts of use. Stakeholders pointed out that research institutions in states that have legalized cannabis risk losing federal funding by using local supplies instead of federally approved product.

It was also remarked that the uniformity of cannabis supplied by the federal government for research further limits the information available on products with higher concentrations of THC. Emerging trends in use, such as consumption of these products, have created important gaps in knowledge about acute and long-term health impacts. Cannabis concentrates, in the form of oils and resins, provide levels of THC in excess of those possible in the plant form. The acute and long-term impacts of these products is currently unknown and of particular concern for high-risk groups. Evidence on these impacts would be valuable to inform product regulations or guidelines and public awareness.

Conduct rigorous, ongoing data collection

As the first states to enact a legalized regulatory framework for cannabis, Colorado and Washington are in a unique position to contribute to the evidence base on the impacts of regulatory change. There are many different perspectives, for example, on potential tax revenue, impact on organized crime and health, and impact on rates of use among both adults and youth (e.g., Light et al, 2014; Caulkins, Andrzejewski, & Dahlkemper, 2013).

Monitoring impacts is also necessary to determine if policy objectives are being met, and to identify unanticipated impacts in a timely manner. However, many stakeholders in both Colorado and Washington expressed frustration that lack of baseline data meant they could not answer many fundamental questions about the impact of legalization. For example, many data systems did not report cannabis separately from other illicit substances, (e.g., school expulsion and suspension data), did not ask about the use of different product formats (e.g., smoked versus edibles), or did not systematically screen for the presence of cannabis (e.g., emergency rooms and coroners' reports). Different data collection and analytical approaches, and reporting timelines contribute to inconsistent results. Stakeholders agreed that quality data would enable a more evidence-driven approach.

Data collection is subject to availability bias, with sales revenue and taxation data being easier to track and report than complex multi-sectoral direct and indirect costs (e.g., poison control calls, emergency visits, hospital stays, treatment numbers, impaired driving fatalities, enforcement training, tourism and employment). Several stakeholders noted the importance of clarifying the research question (e.g., what is the problem the new regulation is trying to solve?) and then collecting and analyzing data strategically to make more efficient use of resources and produce more relevant results.

In Colorado, data on poison control, hospitalizations and emergency department visits have, for example, indicated an increase in cannabis-related incidents between January and June 2014 (Retail Marijuana Public Health Advisory Committee, 2015). However, further analysis is needed to determine if this increase is a result of legalization or other factors such as increased awareness and willingness to report a previously illegal behaviour. Similarly, increases in cannabis-impaired driving incidents in Washington are being attributed by some stakeholders to the new regulatory framework (e.g., Couper and Peterson, 2014); however, others point out that confounding factors such as a recent Supreme Court ruling and increased detection capacity are likely driving this increase.

Additional data collected over time will be needed to demonstrate whether any impact is sustained. Although preliminary evidence does not indicate changes in prevalence of use, stakeholders in Washington did point out that there are indications that perceived risk of cannabis use is decreasing. Evidence supports an inverse relationship between perceived risk and rates of use, meaning that when perceived risk decreases, rates of use increase.

Colorado is addressing gaps in information by adding questions about cannabis to state-level public health surveys for adults, youth, pregnant women and new mothers (Retail Marijuana Public Health Advisory Committee, 2015). Results from these surveys is anticipated in fall 2015, but information on the impact of Amendment 64 will be limited by the lack of comparable baseline data. There is also work underway on questions to collect data on the costs associated with cannabis-related hospital visits and rates of driving while impaired by cannabis.

The passage of I-502 in Washington state included the direction of resources to the Washington State Institute for Public Policy to conduct a comprehensive cost-benefit evaluation of its implementation. The evaluation was to cover impacts on public health, public safety, substance use, the criminal justice system, economy and administration (Washington State Institute for Public Policy, 2015). The evaluation issued its first report in September 2015, outlining the evaluation plan and baseline measures. The first report to provide initial outcome analyses is scheduled for September 2017.

Stakeholders in Washington said they are working with colleagues in other states to promote consistent approaches to measuring impact. This consistency will be extremely useful in providing comparable data, particularly in areas such as criminal justice and the black market, where reliable, quantifiable indicators are less available.

Conclusions and Next Steps

The overarching message that the CCSA delegation heard from Colorado and Washington stakeholders was that if a jurisdiction is considering regulatory changes to cannabis policy, it should identify the central goal or problem to be solved, and use this goal to inform regulations, data collection and public awareness initiatives. A comprehensive regulatory framework should, for example, take into account legislation and policy, public awareness and prevention, health interventions and treatment, detection, deterrence and enforcement, adjudication and sanctions, and evaluation.[4] They also identified the importance of taking the time and investing the resources needed to get it right, assessing impacts along the way, and making incremental changes to respond to emerging lessons learned. Stakeholders also agreed that decreasing regulations is easier than increasing them, and so advised beginning with a more restrictive framework and easing restrictions when appropriate.

Much of the data needed to fully evaluate the impact of cannabis legalization is not yet available, and CCSA will continue to monitor it closely as it emerges. These efforts will be greatly helped by the contacts and relationships established through CCSA's meetings with Colorado and Washington state stakeholders. CCSA will also monitor the emerging policy frameworks in Oregon, Alaska and Washington, DC, following successful legalization campaigns in those jurisdictions in November 2014.

CCSA will use the information gathered from the fact-finding trips to Colorado and Washington state to ensure its contribution to the ongoing dialogue on cannabis policy is informed by the best available evidence. CCSA emphasizes that any changes to cannabis policy should be made based on the principles of applying available evidence, reducing negative health, social and criminal justice impacts, and promoting public health and the equitable application of the law.

CCSA recommends that the dialogue on cannabis policy in Canada begins by defining the problems or harms to be addressed. CCSA also recommends taking advantage of the opportunity to inform the Canadian dialogue with the impacts and lessons learned through the implementation of various policy options internationally.

[4] Based on a framework developed by CCSA to guide the development of a comprehensive regulatory response to the problem of drugs and driving.

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Appendix A: CCSA Delegations

Colorado

CCSA Senior Leadership
Rita Notarandrea, Chief Executive Officer
Rho Martin, Deputy Chief Executive Officer

CCSA Subject Matter Experts
Health — Amy Porath-Waller, Director, Research and Policy
Policy — Rebecca Jesseman, Senior Policy Advisor and Director, Information Systems and Performance Measurement

External Delegates
Gary Bass, Member, CCSA Board of Directors, and Superintendent (retired), Royal Canadian Mounted Police
Ian Culbert, Executive Director, Canadian Public Health Association

Washington State

CCSA Senior Leadership
Rita Notarandrea, Chief Executive Officer

CCSA Subject Matter Experts
Health — Amy Porath-Waller, Director, Research and Policy
Policy — Rebecca Jesseman, Senior Policy Advisor and Director, Information Systems and Performance Measurement

External Delegates
Trevor Bhupsingh, Director General, Law Enforcement and Border Strategies Directorate, Public Safety Canada
Inspector Michael Carlson, Royal Canadian Mounted Police
Ian Culbert, Executive Director, Canadian Public Health Association
Inspector Mike Serr, Vancouver Police Department
Lori Spadorcia, Vice President of Communications and Partnerships, Centre for Addiction and Mental Health

Appendix B: Colorado Stakeholders

Meeting Host	Individual	Role (Organization if different from meeting host)
Colorado Department of Revenue	Barbara Brohl	Executive Director
	Ron Kammerzell	Deputy Senior Director of Enforcement
	Lewis Koski	Director, Marijuana Enforcement Division
SMART Colorado	Gina Carbone	Founding member
	Henny Lasley	Board member
	Jo McGuire	Speaker
Colorado Tobacco Education and Prevention Alliance	Bob Doyle	Executive Director
Marijuana Industry Group	Michael Elliott	Executive Director
Springs Rehabilitation	Ken Finn	Service Provider
Office of the Governor	Andrew Freedman	Director of Marijuana Coordination
	J. Skyler McKinley	Deputy Director of Marijuana Coordination
Vicente Sederberg LLC	Christian Sederberg	Attorney at Law
	Andrew Livingston	Policy Analyst
	Joshua Kappel	Attorney at Law
Colorado Enforcement (multiple organizations)	Ashley Kilroy	Denver Marijuana Coordinator
	Ben Cort	CeDAR; SMART Colorado
	Bruce Mendelson	Denver Drug Strategy
	Chelsey Clarke	Rocky Mountain High Intensity Drug Trafficking Area
	Chris Halsor	Understanding 420
	Jack Reed	Statistical Analyst, Office of Research and Statistics, Colorado Department of Public Safety
	James Henning	Denver Police Department
	Jim Burack	Colorado Department of Revenue, Marijuana Enforcement Division
	Kevin Wong	Rocky Mountain High Intensity Drug Trafficking Area
	Marco Vasquez	Chief, Erie Police Department; Colorado Association of Chiefs of Police
	Mark Fleecs	Denver Police Department
	Marley Bordovsky	Denver City Attorney's Office
	Nachshon Zohari	Denver Drug Strategy
	Rob Madden	Colorado State Patrol
Denver Police Department	Robert White	Chief of Police
	David Quinones	Deputy Chief of Police
Colorado Department of Public Health and Environment	Larry Wolk	Executive Director and Chief Medical Officer
	Tista Gosh	Deputy Chief Medical Officer and Director, Disease Control and Environmental Epidemiology
	Michael VanDyke	University of Colorado Denver, Anschutz Medical Campus
	Ali Maffey	Policy and Communication Unit Supervisor
	Karin McGowan	Deputy Executive Director and Director, Community Relations

Appendix C: Washington State Stakeholders

Meeting Host	Individual	Role (Organization if different from meeting host)
Seattle City Attorney's Office	Peter Holmes	Executive Director
	John Schochet	Deputy Chief of Staff
	Kathleen Harvey	
University of Washington, School of Medicine, School of Social Work and School of Public Health (multiple organizations)	Dr. Dennis Donovan	Director, Alcohol & Drug Abuse Institute; Professor, Department of Psychiatry & Behavioral Sciences
	Roger Roffman	Professor Emeritus, School of Social Work
	Beatriz Carlini	Senior Research Scientist, Alcohol and Drug Abuse Institute
	Caleb Banta-Green	Senior Research Scientist, Alcohol and Drug Abuse Institute
	Sharon Garrett	Research Coordinator, Alcohol and Drug Abuse Institute
	Gillian Schauer	Research Affiliate, Alcohol and Drug Abuse Institute
	Denise D Walker	Research Associate Professor, Co-Director, Innovative Programs Research Group, School of Social Work
	Christine Lee	Research Associate Professor, Psychiatry, Associate Director, Center for the Study of Health and Risk Behaviors
	Mark Cooke	Policy Advocate, American Civil Liberties Union
	Adam Darnell	Senior Research Associate, Washington State Institute for Public Policy
	Jennifer Wyatt	Training & Program Specialist, Northwest Addiction Technology Transfer Center
	Jennifer Velotta	Clearinghouse Coordinator, Information Services & Dissemination, Alcohol and Drug Abuse Institute
	Meg Brunner	Web Information Specialist, Information Services & Dissemination, Alcohol and Drug Abuse Institute
	Kevin Haggerty	Director, Social Development Research Group, School of Social Work
	Nancy Sutherland	Director, Information Services and Dissemination, Alcohol and Drug Abuse Institute
	Katarina Guttmannova	Principal Investigator, Social Development Research Group
	Jennifer Bailey	Principal Investigator, Social Development Research Group
King County Sheriff's Office	Sheriff John Urquhart	
	Chris Barringer	Chief of Staff
Seattle Sick Children's Hospital	Dr. Leslie Walker	Chief, Adolescent Medicine
	Inga Manskopf	Community Coalition Leader
	Liz Wilhelm	Community Coalition Leader
	Kevin Haggerty	Director, Social Development Research Group, University of Washington, School of Social Work
Cannabis City	Dr. James R. Lathrop	CEO
Washington State Economic and Revenue Forecast Council	Lance Carey	Senior Economist
Office of Governor	Jason McGill	Policy Advisor
	Sandy Mullins	Policy Advisor
	Xandre Chateaubriand	Policy Advisor

Washington State Department of Social and Health Services (multiple organizations)	Jane Beyer	Assistant Secretary, Behavioral Health and Service Integration Administration
	Lisa Hodgson	Office Director, Health Professions and Facilities, DOH
	Kristi Weeks	Review Officer/Policy Counsel, DOH
	Paul Davis	Manager, Tobacco Prevention and Control and Marijuana Education, DOH
	Rick Garza	Director, LCB
	Sarah Mariani	Division of Behavioral Health and Recovery
	Mary Segawa	Public Health Education Liaison, LCB
	Steven Johnson	Deputy Chief, Enforcement, LCB
	Michael Langer	Office Chief, Behavioral Health and Prevention, BHSIA
Harris & Moure, pllc	Robert McVay	Attorney at Law
Washington Association for Substance Abuse & Violence Prevention	Derek Franklin	President
Northwest High Intensity Drug Trafficking Area	Dr. Steve Freng	Prevention/Treatment Manager
Washington State Patrol	Lt. Robert Sharpe	Impaired Driving Section Commander

Appendix D: Glossary of Terms

The following terms are commonly used to categorize approaches that fall at various points along the regulatory continuum for cannabis.

Criminalization: The production, distribution and possession of cannabis are subject to criminal justice sanctions ranging from fines to incarceration. Conviction results in a criminal record.

Decriminalization: Non-criminal penalties, for example, civil sanctions such as tickets or fines, replace criminal penalties for personal possession. Individuals charged will not, in most cases, receive a criminal record. Most decriminalization models retain criminal sanctions for larger-scale production and distribution.

Legalization: Criminal sanctions are removed. The substance is generally still subject to regulation that imposes guidelines and restrictions on use, production and distribution, similar to the regulation of alcohol and tobacco.

Regulation: Regulation refers broadly to the legislative or regulatory controls in place with regard to the production, distribution and possession of cannabis. The term is, however, increasingly being used in reference to the guidelines and restrictions on use, production and distribution of cannabis under legalization approaches.