The Legalization and Regulation of Marijuana and Implications for Local Government

A Literature Review

Len Garis, Alex Tyakoff

May 2017

UNIVERSITY OF THE FRASER VALLEY
SCHOOL OF CRIMINOLOGY & CRIMINAL JUSTICE

UNIVERSITY OF THE FRASER VALLEY
CENTRE FOR PUBLIC SAFETY & CRIMINAL JUSTICE RESEARCH

Purpose

The purpose of this study is to provide the City of Surrey with a literature review of journal articles and technical reports relating to the pending legalization and regulation of marijuana in Canada. The literature review is centred around five main themes: (1) marijuana harms to infants, children, and youth: (2) marijuana use and burn injuries: (3) marijuana in the workplace; (4) marijuana and impaired driving; and (5) marijuana production in homes.

Background

The *Controlled Drugs and Substances Act* (S.C. 1996, c. 19) or CDSA is Canada's federal drug control statute. The CDSA oversees the National Drug Scheduling and establishes eight Schedules of controlled substances and two Classes of precursors. Cannabis (Marijuana), its preparations and derivatives, is a prohibited Schedule II drug. Experience in dealing with indoor marijuana grow operations in Surrey, British Columbia, has demonstrated that the production of cannabis on residential properties causes significant health and safety problems. These hazards are well-documented and include the presence of mould, unsafe structural changes, electrical and fire hazards, and harmful chemicals and pesticides.

Setting the stage

In *R v Parker*, 2000, an epileptic man who used cannabis to control his seizures was charged with possession of marijuana. The Ontario Provincial Court ruled that Parker was allowed to possess marijuana for medicinal purposes. Upon appeal, this judgement was upheld by the Ontario Court of Appeal as the criminalization of marijuana throughout Canada was ruled a violation of the *Charter of Rights and Freedoms*. This decision led to the implementation of the *Marihuana Medical Access Regulations* or MMAR in 2001 which permitted medicinal use of marijuana for symptoms associated with terminal illness and other medical conditions. The MMAR enabled individuals with the authorization of their health care practitioner to access dried marijuana for medicinal purposes by producing their own marijuana plants, designating someone to produce for them or purchasing Health Canada supply.

Over time, court decisions resulted in a number of changes to the MMAR. In June 2013, the Government of Canada implemented the Marihuana for Medical Purposes Regulations or MMPR. The MMPR created conditions for a commercial industry responsible for the production and distribution of marijuana for medical purposes. Under the MMPR regime, individuals with a medical need could access quality-controlled dried marijuana produced under secure and sanitary conditions. In June 2015, the Supreme Court of Canada, in *R. v. Smith*, decided that restricting legal access to only dried marijuana was unconstitutional. The Court decided that individuals with a medical need have the right to use and make other cannabis products. In 2016, the *Access to Cannabis for Medical Purposes Regulations* (S.O.R./2016-230) or ACMPR came into effect, allowing

Canadians to possess and grow marijuana for medicinal purposes. The ACMPR is Canada's response to the Federal Court of Canada's February 2016 decision in *Allard v. Canada*. This decision found that requiring individuals to get their marijuana only from licensed producers violated liberty and security rights protected by section 7 of the *Canadian Charter of Rights and Freedoms*. The Court found that individuals who require marijuana for medical purposes did not have "reasonable access."

Regulatory compliance at the local level

Under the ACMPR regime, licence holders are required to comply with all appropriate regulations during the production of medicinal marijuana. Health Canada does not inspect licensees' activities to monitor regulatory compliance, and privacy legislation prevents Health Canada from sharing licence holders' details. This prevents third parties from conducting systematic regulatory inspections and ensuring the safety of residential communities. This has implications for local government. Without regulatory oversight, it remains unclear whether licenced medical production is causing health and safety problems in residential buildings. The experience with licenced medical production of marijuana and concerns around the lack of regulatory compliance raises questions respecting the legalization of marijuana. In 2015, Prime Minister Trudeau's Liberal government announced its intention to legalize and regulate marijuana in Canada by spring 2017.

Current status

In 2016, the Government of Canada announced they would be introducing marijuana legislation in spring 2017. The Task Force on Cannabis Legalization and Regulation was formed to guide the movement towards the legalization of marijuana in Canada. To date, no Federal laws have been changed regarding marijuana legalization; however, the Government of Canada continues to advance Bill C-45 with the following stated objectives:

- restrict youth access to marijuana;
- protect young people from promotion or enticements to use marijuana;
- deter and reduce criminal activity by imposing serious criminal penalties for those breaking the law, especially those who import or export marijuana, or provide marijuana to youth;
- protect public health through strict product safety and quality requirements;
- reduce the burden on the criminal justice system;
- provide for the legal production of marijuana to reducer illegal activities;
- allow adults to possess and access regulated, quality-controlled, legal marijuana; and,
- enhance public awareness of the health risks associated with marijuana.

Bill C-45 (The Cannabis Act), an Act respecting marijuana and to amend the *Controlled Drugs and Substances Act, the Criminal Code of Canada* and other Acts received first reading in April 2017. Subject to approval by Parliament, the Government of Canada intends to bring the proposed Cannabis Act into force with a target date of no later than July 2018. The following outcomes are anticipated:

- Sales to be restricted to people age 18 and older, but provinces could increase the minimum age;
- New fines or jail time for anyone who sells cannabis to youth or creates products appealing to youth;
- Adults could publicly possess up to 30 grams of dried cannabis;
- Sales by mail would be allowed in provinces that lack a regulated retail system;
- Adults could grow up to four cannabis plants (per residence);
- Adults could produce legal cannabis products, such as food or drinks, for personal use at home;
- At first, sales will entail only fresh and dried cannabis, cannabis oils and seeds and plants for cultivation;
- Possession, production and distribution outside the legal system would remain illegal; and,
- The existing program for access to medical marijuana would continue as it currently exist

Five Harms

The pending legalization of marijuana brings with it a concern regarding what the Government of Canada is doing to prepare for the changes. These concerns range from driving regulations or impaired driving, levels and detection of impairment at the workplace, and fire and life safety in residences to health and mental health short and long-term repercussions, public use of marijuana, and use around infants, children and youth. These and related issues will be felt at the local level and will impact municipalities throughout the Province of BC and Canada. Recent issues with the ACMPR and lack of regulatory compliance at the local level is an example. This literature review helps to surface new and existing issues that will inevitably arise as the Federal government policies' progress.

Marijuana harms to infants, children, and youth

- The American Academy of Pediatrics (AAP) opposes legalization of marijuana because of the potential harms to infants, children, and adolescents (AAP Policy Statement, March 2015, p. 586)
- Researchers found that among children 1 month to 2 years whose parents indicated marijuana use in the home or by a caregiver, 75% had COOH-THC in their urine compared to 10% of peers (Wilson et al., 2017, p. 589)
- Approximately 9% of those who experiment with marijuana will become addicted. The number goes up to about 1 in 6 among those who start using marijuana as teenagers and 25 to 50% among those who smoke marijuana daily (Volkow, Baler, Compton & Weiss, 2014, p. 2219)

- Vaping is perceived and being sold as a safer way to use marijuana, despite the lack of data on the health effects of chronic vaping (Budney, Sargent & Lee, 2015, p. 1699)
- Vaping could prompt an increased likelihood of trying marijuana, earlier age of onset, more positive initial experiences, and more frequent use, increasing the probability of problematic use or addiction (Budney, Sargent & Lee, 2015, p. 1699)

Marijuana use and burn injuries

- California experienced an increase in burn injuries related to the production of butane hash oil [BHO; a concentrated tetrahydrocannabinol product produced by the distillation of marijuana plant products with pressurized butane] (Romanowski et. al., 2017, p. 165)
- Colorado experienced a dramatic increase in flash burns associated with BHO production following the liberalization of marijuana policy. Home and non-commercial extraction can be dangerous when production rooms are poorly-ventilated leading to accumulation of butane vapor (Bell, Slim, Flaten, Lindberg, Arek & Monte, 2015, p. 424)
- Inhaling a highly concentrated form of THC raises several safety concerns, primarily dangers inherent to BHO production, potential contamination of homemade product, and an increased risk of addiction and psychosis associated with the highly concentrated THC vapors (Furey, 2016, p. 12)
- The safety of at-home BHO production has been compared to that of home methamphetamine labs due to butane's highly flammable and volatile nature. BHO production resulted in several documented cases of fires, explosions, and severe burns (Furey, 2016, p. 12)

Marijuana in the workplace

- The prevalence of marijuana use disorder has risen in recent years, although a causal link between this increase and marijuana policies has not been established. Cannabis use disorder is associated with a host of psychiatric conditions, including substance use disorders, affective disorders, anxiety disorders, and personality disorders (Hill, 2016, p. 798)
- Although studies have suggested that marijuana may be used with reasonable safety in some controlled environments, there are potential consequences to its use that necessitate employer scrutiny and concern (Goldsmith et al., 2015, p. 518)
- Several drug characteristics must be considered, including THC concentration, route of administration, dose and frequency, and pharmacokinetics, as well as the risks inherent to particular workplace environments (Goldsmith et al., 2015, p. 518)
- The cognitive skills required for safety-sensitive work tasks overlap to varying degrees with those required to safely operate a vehicle. Skills and capacities include unimpaired alertness, attention, concentration, coordination, reaction time, memory, ability to multi-task, perceptual abilities, thought-processing, judgement, and insight (Els, Amin & Straube, 2016, p. 6)

Marijuana and impaired driving

- The risk of involvement in a motor vehicle accident (MVA) increases approximately 2-fold after cannabis smoking (Hartman & Huestis, 2013, p. 478)

- Acute marijuana consumption is associated with an increased risk of an MVA, especially for fatal collisions (Asbridge, Hayden & Cartwright, 2012, p. 1)
- In 2014, 84.3% of drivers positive for cannabinoids in Washington State were positive for THC, compared to only 44.4% of cannabinoid-positive drivers in 2010. In 2014, among the 75 drivers involved in fatal crashes positive for THC, approximately half (38) exceeded the 5 ng/ml THC per se limit (Washington Traffic Safety Commission, 2015, p. 2)
- According to the Road Safety Monitor and Canada's National Fatality Database, marijuana-positive fatally injured drivers increased from 12.8% in 2000 to 19.7% in 2012 (Robertson, Hing, Pashley, Brown & Vanlaar, 2017, p. 236 & 240)
- The total estimated cost of cannabis-attributable traffic collisions in Canada in 2012 was approximately $1.09 billion, with drivers accounting for approximately $643 million (59%) of these costs (Wettlaufer et al., 2017, p. 187)
- Overall, fatalities accounted for 58% of the costs and injuries accounted for 34% of all cannabis-attributable costs (Wettlaufer et al., 2017, p. 187)

Marijuana production in homes

- Production of marijuana on residential properties creates significant health and safety problems (Clare, Garis & Maxim, 2017)
- The current administrative structure for licensing medicinal marijuana production does not prevent residential buildings from being used as marijuana-production sites (Clare, Garis & Maxim, 2017)
- Researchers demonstrated that large-scale residential grow operations present multiple known hazards which include mould, unsafe structural changes, electrical and fire hazards, chemicals, and carbon dioxide (Garis, Clare & Maxim, 2015, pps. 4 & 5)
- The growing and drying of marijuana plants contributes considerable amounts of water vapor to the indoor environment. Depending on the scale of production, considerable mould damage in the building can result (Johnson & Miller, 2011, p. 595)
- There are also a number of abiotic hazards resulting from marijuana production, including pesticides, carbon monoxide, and products of unvented combustion appliances (Johnson & Miller, 2011, p. 595)

Author Biographical Information

Len Garis is the Fire Chief for the City of Surrey, British Columbia, an Adjunct Professor in the School of Criminology and Criminal Justice & Associate to the Centre for Social Research at the University of the Fraser Valley (UFV), a member of the Affiliated Research Faculty at John Jay College of Criminal Justice in New York, and a faculty member of the Institute of Canadian Urban Research Studies at Simon Fraser University. Contact him at LWGaris@surrey.ca

Alex Tyakoff is the Strategic Planning Analyst for the City of Surrey Fire Service, BC. He has 26 years' of experience in public safety research and analysis, and a former city planner. He possesses a Master of Science degree in Urban and Regional Planning from the University of British Columbia. He is a sessional lecturer in graduate studies, School of Criminology and Criminal Justice at UFV. Contact him at ATyakoff@surrey.ca

References

1. American Academy of Pediatrics. Committee on Substance Abuse, Committee on Adolescence. A Policy Statement. 2015. The impact of marijuana policies on youth: Clinical, research, and legal update. *Pediatrics.* 135 (3): 584-587.

2. Asbridge, Mark, Jill A. Hayden, and Jennifer L. Cartwright. 2012. Acute cannabis consumption and motor collision risk: Systematic review of observational studies and meta-analysis. *British Medical Journal.* 344: 1-9.

3. Bell, Cameron, Jessica Slim, Hanna K. Flaten, Gordon Lindberg, Wiktor Arek, Andrew A. Monte. 2015. Butane hash oil burns associated with marijuana liberalization in Colorado. *Journal of Medical Toxicology.* 11 (4): 422-425.

4. Budney, Alan J., James D. Sargent, Dustin C. Lee 2015. Vaping cannabis (marijuana): Parallel concerns to e-cigs? *Addiction.* 110 (11): 1699-1704.

5. Clare, Joseph, Len Garis, Paul Maxim. 2017. Medicinal marijuana production creates problem residential properties: A routine activity theory explanation and a situational crime-prevention solution. *Canadian Journal of Criminology and Criminal Justice.* 59 (2): 143-167.

6. Els, Charl, Aditi Amin, Sebastian Straube. 2016. Marijuana and the workplace. *Canadian Journal of Addiction.* 7 (4): 5-7.

7. Furey, Katrina. 2016. Adolescents "dabbing" with marijuana: A novel mechanism for smoking highly concentrated tetrahydrocannabinol. *The American Journal of Psychiatry: Residents Journal.* 11 (6): 12.

8. Garis, Len, Joseph Clare, Paul Maxim. 2015. *Illuminating the hazards of residential marijuana grow operations.* New York: John Jay College of Criminal Justice of the City University of New York. The Christian Regenhard Center for Emergency Response Studies (RaCERS). Working Paper 15-01.

9. Goldsmith, Robert S., Marcelo C. Targino, Gilbert J. Fanciullo, Douglas W. Martin, Natalie P. Hartenbaum, Jeremy M. White, Phillip Franklin. 2015. Medical marijuana in the workplace: Challenges and management options for occupational physicians. *Journal of Occupational and Environmental Medicine.* 57 (5): 518-525.

10. Hartman, Rebecca L., and Marilyn A. Huestis. 2013. Cannabis effects on driving skills. *Clinical Chemistry.* 59 (3): 478-492.

11. Hill, Kevin P. 2016. Recreational cannabis legalisation: details will determine mental health effects. *Lancet.* 3: 798-799.

12. Johnson, Luke I., J. David Miller. 2011. Consequences of large-scale production of marijuana in residential buildings. *Indoor and Built Environment.* 21 (4): 595-600.

13. Robertson, Robyn D., Marisela Mainegra Hing, Charlotte R. Pashley, Steve W. Brown, Ward G.M. Vanlaar. 2017. Prevalence and trends of drugged driving in Canada. *Accident Analysis and Prevention.* 99: 236-241.

14. Romanowski, Kathleen S., Alura Barsun, Peter Kwan, Esther H. Teo, Tina L. Palmieri, Soman Sen, Pirko Maguina, David G. Greenhalgh. 2017. Butane hash oil burns: A 7-year perspective on a growing problem. *Journal of Burn Care and Research.* 38 (1): 165-171.

15. Salomonsen-Sautel, Stacy, Sung-Joon Min, Joseph T. Sakai, Christian Thurstone, Christian Hopfer. 2014. Trends in fatal motor vehicle crashes before and after marijuana commercialization in Colorado. *Drug and Alcohol Dependence.* 140: 137-144.

16. Volkow, Nora D., Ruben D. Baler, Wilson M. Compton, Susan R.B. Weiss. 2014. Adverse health effects of marijuana use. *The New England Journal of Medicine.* 370: 2219-2227.

17. Wadsworth, E.J.K, S.C. Moss, S.A. Simpson, A.P. Smith. 2006. A community based investigation of the association between cannabis use, injuries and accidents. *Journal of Psychopharmacology.* 20 (1): 5-13.

UNIVERSITY OF THE FRASER VALLEY
SCHOOL OF CRIMINOLOGY & CRIMINAL JUSTICE

UNIVERSITY OF THE FRASER VALLEY
CENTRE FOR SOCIAL RESEARCH