



Serious and life-threatening events associated with non-medical (recreational) cannabis use in Canadian children and youth

PROTOCOL

Principal investigators

Richard E. Bélanger, MD, Department of Paediatrics, Centre mère-enfant Soleil - CHU de Québec - Université Laval, 2705 Boulevard Laurier, R1742, Quebec City QC G1V 4G2; tel.: 418-654-2282; fax: 418-654-2137; richard.belanger@chudequebec.ca

Christina Grant, MD, Division of Adolescent Medicine, Department of Paediatrics, McMaster University, 3G48-1200 Main St W, Hamilton ON L8N 3Z5; tel.: 905-521-2100, ext. 75644; fax: 905-308-7548; chgrant@mcmaster.ca

Co-investigators

Hanan Abramovici, PhD, Cannabis Legalization and Regulation Secretariat, Health Canada

Amy Acker, MD, Hotel Dieu Hospital, Queen's University

Seth D. Ammerman, MD, Lucile Packard Children's Hospital, Stanford University

Nathalie Gingras, MD, CIUSSS Capitale-Nationale, Université Laval

Julie Laroche, PhD, Controlled Substances Directorate, Health Canada

Charlotte Moore Hepburn, MD, The Hospital for Sick Children

Robert Yates, MD, McMaster Children's Hospital, McMaster University

Collaborators

Dirk Huyer, MD, Chief Coroner for Ontario

Background

Historically, cannabis has been a controlled substance in Canada. Since 2001, its use for medical purposes has been authorized under federal regulations, regardless of age. Legalization of cannabis for non-medical (recreational) use has taken place in some other jurisdictions resulting in changes in its access and availability. For example, non-medical cannabis use is legal in Uruguay and in several U.S. states for adults over 21 years of age.



In 2015, the Liberal Party of Canada made an election promise that a Liberal government would legalize, regulate, and restrict access to marijuana. On April 16, 2016, Canada's Health Minister told the United Nations at a special session of the General Assembly in New York that the introduction of new legislation that will "keep marijuana out of the hands of children and profits out of the hands of criminals" would take place in 2017.^{1,2} In April 2017, the Minister of Justice and Attorney General of Canada introduced Bill C-45 in the Canadian House of Commons: *An Act respecting cannabis and to amend the Controlled Drugs and Substances Act, the Criminal Code and other Acts*. Bill C-45 enacts the Cannabis Act to provide legal access to cannabis and to control and regulate its production, distribution, and sale. At present, the Act is expected to be implemented by the fall of 2018.⁷

While there is no intent to legalize cannabis use for non-medical purposes for minors in Canada, any change in legal status of the substance for adults will very likely impact children, adolescents, and their caregivers. To better communicate the known health impacts of cannabis use, specifically in children and youth, the Canadian Paediatric Society (CPS) published a position statement in November 2016: *Cannabis and Canada's children and youth*.⁴ Given that most of the scientific evidence to date has reported on the negative outcomes related to cannabis use, the position statement focused on the physical and mental health issues that are specific to cannabis use by youth, and the risks to younger children through unintentional exposure.

Alongside other organizations, such as the Canadian Medical Association and the American Academy of Pediatrics, CPS recognizes that children and adolescents may be among those most at risk and has endorsed several recommendations to protect them from the harms associated with recreational cannabis use. A key recommendation is actively monitoring the individual and public health impacts on children and youth of any changes in cannabis legislation that may occur in Canada.⁴

While there are many differing views about the health impacts of legalization, there is little scientific evidence at the moment to help guide policy makers on what the actual health outcomes are with respect to Canadian children and youth. Of note, one of the key challenges U.S. states faced in terms of evaluating the effects of legalization of cannabis was the lack of sufficient high-quality data around legalization.

Methods

Through the established methodology of the Canadian Paediatric Surveillance Program (CPSP), over 2,700 paediatricians and paediatric subspecialists will be actively surveyed on a monthly basis for all new cases of serious and life-threatening events associated with non-medical cannabis use in Canadian children and youth. For each case reported on the monthly form, participants will complete a detailed questionnaire seeking non-nominal demographic and clinical information to ensure that the case definition is met.



To increase case capture, efforts will be made to include a large proportion of child and adolescent psychiatrists and coroners in the surveillance.

Case definition

Report any child or adolescent less than 18 years of age (up to the 18th birthday) presenting with a new health condition or a deteriorating chronic/previously diagnosed condition resulting in either hospitalization (inpatient, intensive care unit, psychiatric), permanent disability, or death, which was likely primarily caused by the use of cannabis for non-medical (recreational) purposes.

This includes either intentional or unintentional exposure to cannabis in a child or adolescent, or a condition resulting from use by another individual, such as a friend or a parent/caregiver, who is under the influence of cannabis.

Exclusion criteria

- A condition resulting from cannabis use for non-medical purposes during pregnancy/breastfeeding
- A condition resulting from cannabis use for medical purposes

Objectives

- 1) Describe the clinical presentations, diagnoses, and associated medical needs of children and adolescents seeking medical attention with serious and life-threatening events likely due to cannabis use for non-medical purposes in Canada
- 2) Follow changes over time in health-related indicators related to a modification in the legal status of cannabis at the national and/or provincial levels

Duration

September 2018 to September 2030

Expected number of cases

According to the Canadian Institute of Health Information (CIHI) database, the number of individuals (all ages) hospitalized with marijuana recorded as the main cause for hospitalization rose from 598 in 2007–2008 to 908 cases in 2012–2013.⁵

In terms of age group distribution in Canada in 2016, Statistics Canada reported that individuals 19 years of age and younger represented approximately 22% of the total population, or 7,898,144 individuals.⁶ Based on these numbers, and recognizing that hospitalizations are likely not distributed evenly across all age groups, and that hospitalizations from the province of Quebec are excluded from the CIHI database (Quebec represents approximately 23% of the Canadian population), it is estimated that approximately 250 cases per year will meet the case definition among the paediatric population.

Study limitations

As with any voluntary reporting surveillance system, the Canadian Paediatric Surveillance Program (CPSP) recognizes that reporting on minimum incidence



rates can have limitations, including under-representation of the disease in the population. It is possible that some groups of children will be missed, for example, those who live in rural or remote areas (e.g., children living in northern communities) as they may be less likely to receive timely specialist care. Youth who are approaching transition-to-adult-care age may also be under-represented, as they may be treated by an adult provider in an adult facility. Moreover, case level surveillance data is extracted from patient charts following the clinical encounter. Data elements, including details of history, physical examination, and relevant components of the diagnostic assessment, not collected as part of routine care will be absent from the surveillance totals.

However, surveillance still serves a very important purpose and provides rich clinical data that will allow a better understanding of serious and life-threatening events associated with recreational cannabis use in Canadian children and youth.

Ethical approval

Health Canada and Public Health Agency of Canada's Research Ethics Board

Analysis and publication

Data provided by this study will be analyzed to provide information to health care practitioners and other stakeholders to better understand serious and life-threatening events in Canadian children and youth associated with non-medical (recreational) cannabis use. Data will also be used to assess the possible effects of a change in the legal status of cannabis in Canada.

Study results will be submitted for publication in high-impact, peer-reviewed scientific journals. The investigators will approach CPS to develop further position statements, practice points, etc. that can be shared with paediatric care providers, as well as provincial and federal authorities overseeing non-medical cannabis use in Canada. Additionally, this information can be adapted for public education materials. Study results will also be presented at national and international meetings and conferences.

References

1. CBC News. Federal marijuana legislation to be introduced in spring 2017, Philpott says. Posted: April 20, 2016 <http://www.cbc.ca/news/politics/philpott-un-marijuana-legislation-legalize-1.3544554>
2. Liberal Party of Canada. We will legalize, regulate, and restrict access to marijuana. <http://www.liberal.ca/realchange/marijuana/>
3. Canada. Parliament. House of Commons. Bill C-45. An Act respecting cannabis and to amend the Controlled Drugs and Substances Act, the Criminal Code and other Acts. April 2017 <http://www.parl.ca/DocumentViewer/en/42-1/bill/C-45/first-reading>
4. Grant CN, Bélanger RE. Cannabis and Canada's children and youth. Canadian Paediatric Society Adolescent Health Committee. Paediatr Child Health 2017;22(2):98-102.



5. Maslov A, Lawrence A, Ferguson M. Cannabis Performance Metrics for Policy Consideration. What Do We Need to Measure? Research Report: 2016-R009. Public Safety Canada: Ottawa, ON 2016.
<https://www.publicsafety.gc.ca/cnt/rsrscs/pblctns/2016-r009/2016-r009-en.pdf>
6. Statistics Canada. CANSIM (database) Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories.
<http://www5.statcan.gc.ca/cansim/a26?id=510001>
Last modified: September 26, 2017
7. Canada. Department of Justice. Cannabis Legalization and Regulation.
<http://www.parl.ca/DocumentViewer/en/42-1/bill/C-45> Last modified: August 9, 2018



PROTOCOL