Commentary

Initial indicators of the public health impacts of non-medical cannabis legalization in Canada

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On 17 October 2018, Canada implemented the legalization of non-medical use and supply of cannabis - a significant policy reform milestone internationally. Canada was the first high-income nation to do so with a public health rationale [1]. As studies of cannabis legalization's impact in US states and Uruguay have been inconclusive [2,3], it is worth and timely considering the short-term impacts of legalization in Canada.

Traditionally, Canada has had comparatively high rates of population cannabis use, especially among young people. Key indicators of cannabis-related harm (e.g., hospitalizations) were increasing pre-legalization [4]. Furthermore, there was ready availability of cannabis before legalization through illegal and 'grey' sources, including diversion from liberal national 'medical cannabis access' provisions in place for numerous years.

The main goals of Canadian cannabis legalization include undermining illegal cannabis markets while restricting cannabis use among young people. The regulatory efforts to achieve these goals however involve heterogeneous policy frameworks. The core legal framework is provided by the (federal) Cannabis Act. However, regulations, for example regarding age and place-of-use restrictions, and retail distribution are provincial and vary considerably. For example, minimum legal purchase ages range from 18 − 21 years; some but not all provinces allow public use; critically, the cannabis retail distribution systems in different provinces comprise a mix of private and public (or hybrid) models. Consequently, Canada's legalization project comprises a potpourri of provincial sub-experiments under different regulations that may differentially influence key policy outcomes.

Some data on post-legalization developments are available from newly implemented, national (government-sponsored) population surveys. These are limited by their sampling frames [5,6] yet provide select initial insights on cannabis-related outcomes one-year after legalization (2019). Concretely, these find that around one-in-six Canadians report active (in the past 3 months) cannabis use, with one-third reporting daily or near-daily use. Notwithstanding some inconsistent trends, cannabis use remains concentrated among young adults, although use has reportedly increased across all age-groups since 2018. 'Smoking' of herbal cannabis remains the most common use mode but others, including edibles and vaping, have increased. Half of all cannabis users claim that at least some of their use is for ('medical reasons' sanctioned or un-sanctioned). About one-in-four cannabis users report driving a motor-vehicle after using cannabis, though only about two-in-100 report any contact with law enforcement related to cannabis-impaired driving [5,6].

Some early data on cannabis supply exist. The price of legal cannabis products has remained relatively steady (∼$10/gram) but prices of illegal cannabis products have dropped substantially (to ∼$6/gram), creating an increasing price advantage for the illicit market [7]. These price discrepancies, and likely other retail dynamics, may explain why about 50% of users reported utilizing legal sources, yet only three-in-ten exclusively use legal sources for cannabis purchases. There were initial concerns about shortages of legal cannabis product immediately after legalization. The federal government has now licensed >260 commercial cannabis producers, resulting in rapidly growing cannabis inventories, or an 'over-stock' situation, and an anticipated need for 'consolidation' of the booming industry [8]. Alcohol sales data have shown a recently accelerated decline in beer sales after cannabis legalization, which may point to a possible substitution effect [9].

These data provide initial insights into possible public health impacts of cannabis legalization in Canada. As documented for other 'legalization' contexts, it is not possible to draw firm conclusions on its overall impact [2,3]. In fact, many of the present indicators may reflect policy transition effects. They however underscore outcomes that require

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rigorous future monitoring, even if Canadian data-systems are less well-developed and more fragmented than their US counterparts [4].

It is of concern that rates of cannabis use among young users may be increasing after legalization in Canada. This development differs from trends observed in other legalization settings [10]. Population-level data on key harms (e.g., hospitalizations, impairment-related injuries or deaths) are not yet available. Data on the extent to which legal cannabis products have supplanted illicit ones are limited. Illegal cannabis markets seem to be resilient, and increasingly price-competitive. Moreover, the legal cannabis industry appears to have become more 'commercialized' than the originally proposed public health-framing of legalization implied. These data suggest that the primary policy objectives of legalization may not immediately be achieved.

It will require more time and more rigorous data to more conclusively assess the fundamental impact of Canada's cannabis legalization experiment on public health and safety [1, 2, 4]. Current interim indicators suggest mixed effects at best, and much room for improvement. Other key data will not be available for some time. Canadian governments should allocate some of the tax revenue from cannabis sales to fund more rigorous evaluations of the impacts of cannabis legalization.

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Author contributions

BF conceptualized the paper and prepared the initial draft. AL, CK-M, and WH reviewed and provided substantive intellectual contributions with regards to data and data interpretation, and revised subsequent drafts of the paper. All authors read and approved the final manuscript submitted.

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Declaration of Competing Interest

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