

# Opioid Prescribing in Canada following the Legalization of Cannabis: A Clinical and Economic Time Series Analysis

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May 26, 2020

## Abstract

**Rationale, aims and objectives:** Between January 2016 and March 2019, an estimated 12,800 Canadians died from an opioid-related overdose. A contributing factor has been the abuse of legally obtained prescription opioids. The use of plant derived cannabinoids for chronic pain has been growing in recent years. In October 2018, recreational cannabis became legal in Canada, which resulted in increased access and a reduction in the stigma associated with usage. The purpose of this study was to assess trends in the amount and total cost of opioid prescribing in Canada prior to and following cannabis legalization. **Methods:** National monthly prescription claims data for public and private payers were obtained from January 2016 to June 2019. The drugs evaluated consisted of morphine, codeine, fentanyl, hydrocodone, hydromorphone, meperidine, oxycodone, tramadol and the non-opioids gabapentin and pregabalin. All opioid volumes were converted to a mean morphine equivalent dose (MED)/claim. Gabapentin and pregabalin claims data were analyzed separately from the opioids. Time series regression modelling was undertaken with dependent variables being mean MED/claim and total monthly spending. The slopes of the time series curves were then compared pre vs. post cannabis legalization. **Results:** Over the 42-month period, the mean MED/claim declined within public plans ( $p < 0.001$ ). However, the decline in MED/claim was 5.4 times greater in the period following legalization (4.1 vs. 22.3 mg/claim). Total monthly opioid spending by public payers was also reduced to a greater extent post legalization (\$95,000 vs. \$267,000 per month). The findings were similar for private drug plans; however, the absolute drop in opioid use was more pronounced (30.8 mg/claim pre vs. 76.9 mg/claim post). Over the 42-month period, gabapentin and pregabalin usage also declined. **Conclusions:** Our findings support the hypothesis that easier access to cannabis for pain may reduce opioid use for both public and private drug plans.

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