

Introduction

As the global opioid crisis continues, Alberta's medical regulator – the College of Physicians & Surgeons of Alberta (CPSA) – has shifted programming in hopes of mitigating potentially severe patient outcomes. One such innovation was to introduce the *MD Snapshot-Prescribing*: an interactive tool, first released in 2016, providing Alberta physicians with quarterly individualized reporting about their prescribing of opioids, benzodiazepine/z-drugs and most recently, antibiotics. Anecdotal reports have surfaced claiming oversight from CPSA has resulted in unintended consequences such as inappropriate or dangerous rapid tapering/ discontinuation of opioids for chronic recipients. This current study aims to address those anecdotal reports by retrospectively looking at Alberta's prescription data for instances of rapid tapering and/or discontinuation.

Methodology

The methodology of this study was inspired by a similar study conducted in Ontario, Canada [1].

Study Design

Population-based, repeated, cross-sectional study that examined chronic opioid prescription recipients from community pharmacies in Alberta, Canada from 2015 to 2020.

Participants

Albertans aged 18+ who received an opioid dispense from a community pharmacy within our "data window" (Fig. 1) prescribed by a physician between 2015-2020 were included in the study. Provincial Health identification numbers were used to uniquely identify patients.

Cohort of Interest

Chronic patients were identified by calculating Oral Morphine Equivalents (OME) per day at a given point in time (reference day), which would fall within our "data window." The data window included the 90 days prior to the reference day and the 90 days post (Fig. 1).

Chronic patients were grouped as **high dose (>90 OME/day)** or **very high dose recipients (>200 OME/day)**. The data window was shifted in time from 2015-2020 to detect any rapid changes in OME/day in chronic recipients.

Data Sources

Prescription data was sourced from Alberta's Tracked Prescription Program (TPP), received via Alberta Netcare Pharmaceutical Information Network (PIN).

Statistical Analysis

Autoregressive Integrated Moving Average (ARIMA) models are used to evaluate time series [2]. This approach was used to analyze the proportion of people who experienced potential rapid dose tapering (Fig. 3, 4), while considering the release of opioid prescribing guidelines and CPSA's prescribing reports as population-level interventions.

Ethical Considerations

This study was approved by the University of Alberta's Research Health Ethics Board (Pro00107844).

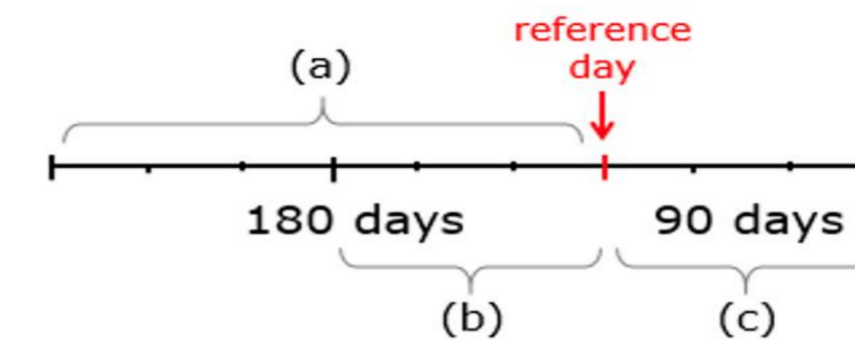


Fig 1. Data window and reference day

Results

Approximately 15K dispenses/day were analyzed from 2015-2020. Total number of opioid recipients is highly cyclic in nature (peaking in winter).

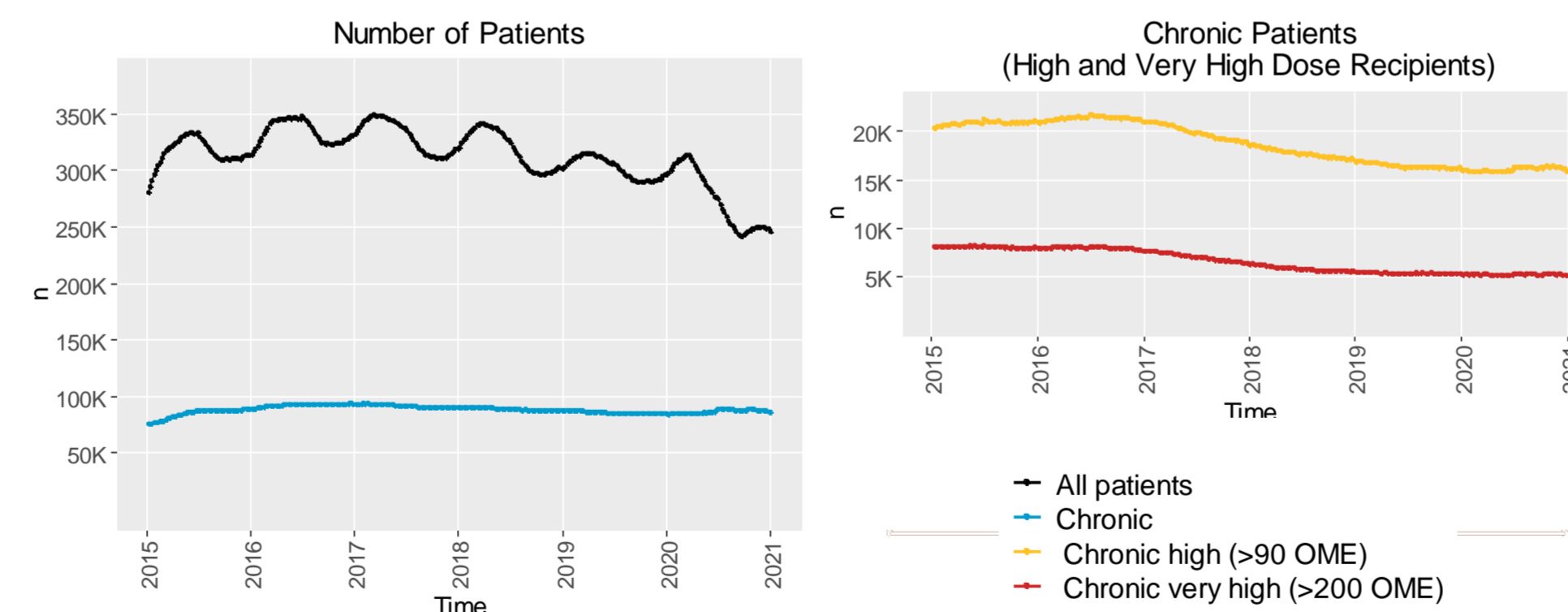


Fig 2. Number of patients over time

In Fig. 2, the number of chronic opioid recipients has remained somewhat stable from ~75.3K at the beginning of 2015 to ~85.8K at the end of 2020. The number of chronic **high** and **very high** dose recipients presents a significant decrease after 2017.

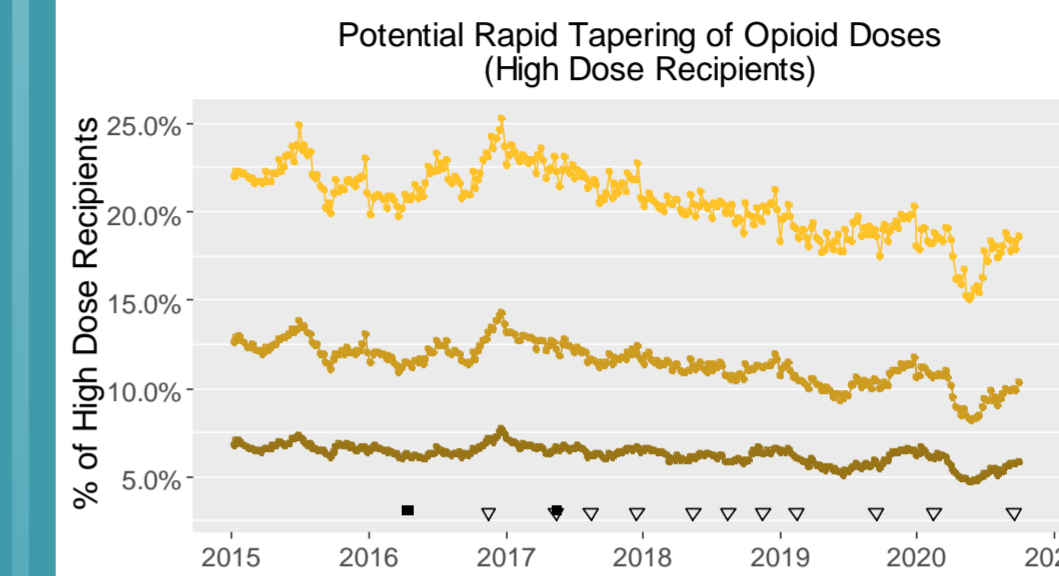


Fig 3. Potential rapid dose tapering among high dose recipients

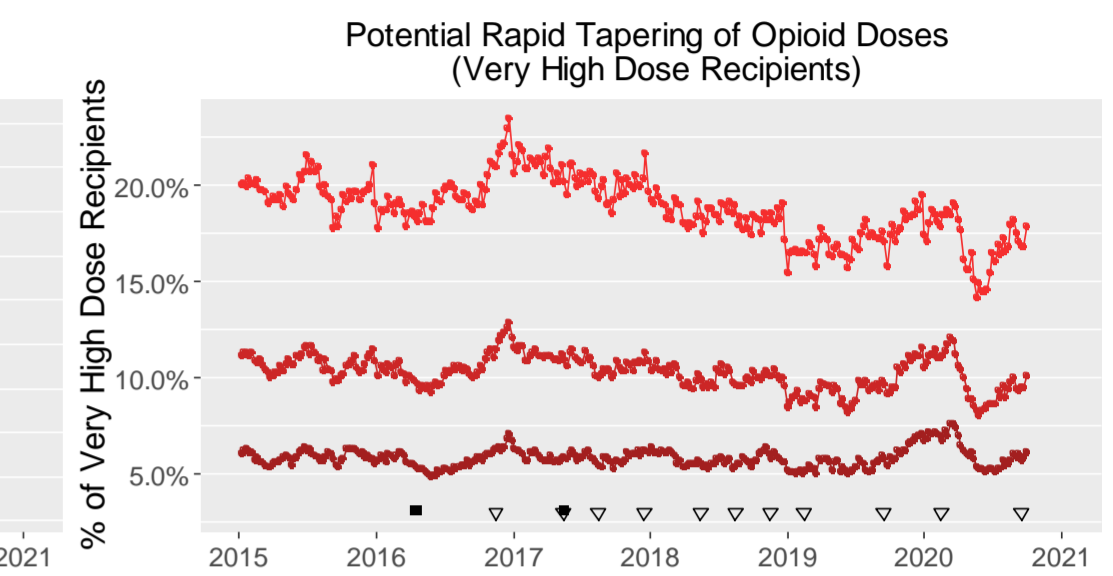


Fig 4. Potential rapid dose tapering among very high dose recipients

Fig. 3 & 4 depict the prevalence of potential dose tapering among chronic **high** and **very high** dose recipients. We estimate that ~11-12% of chronic high dose recipients experience potential rapid dose tapering (a decrease $\geq 50\%$ pre vs post reference day). For chronic very high dose recipients, ~11.5% experience potential rapid dose tapering (a decrease $\geq 50\%$ pre vs post reference day) at any given point of time.

The prevalence of potential rapid dose tapering has remained stable for both groups. In fact, a slight decrease can be observed since 2017. To evaluate the impact of the release of the CDC and Canadian opioid prescribing guidelines, as well as the release of the CPSA's *MD Snapshot-Prescribing* reports, intervention functions in the ARIMA model were included at relevant dates. The forecast package for R was used to identify the best ARIMA model terms. The effect of most interventions were not significant, and for those that were, they were associated with **only a small decrease in the prevalence of rapid dose tapering**.

Conclusions

The prevalence of rapid opioid tapering/discontinuation in Alberta has been consistent with an overall decreasing trend from 2015-2020; thus, disputing anecdotal reports that inappropriate discontinuation of opioids was occurring in the province. **Rapid tapering of opioids in Alberta is fiction!**

References

- [1] Martins, D., et al., *Impact of changes in opioid funding and clinical policies on rapid tapering of opioids in Ontario, Canada*. PAIN, 2022. **163**(1): p. e129-e136.
- [2] Schaffer, A.L., T.A. Dobbins, and S.-A. Pearson, *Interrupted time series analysis using autoregressive integrated moving average (ARIMA) models: a guide for evaluating large-scale health interventions*. BMC Medical Research Methodology, 2021. **21**(1): p. 58.