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Linking the Narcotics Monitoring System Database to Quantify the Contribution of Prescribed and Non-Prescribed Opioids to Opioid Overdoses in Ontario, Canada

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Introduction

The Ontario Narcotics Monitoring System (NMS) captures information on all prescriptions for controlled medications dispensed from outpatient pharmacies in Ontario, Canada, regardless of payer. This system was introduced in 2012, as a strategy to promote appropriate prescribing and dispensing practices.

Objectives and Approach

We sought to explore the degree to which prescriptions in the NMS can be linked to other health claims databases, and describe the types of medications dispensed between July 2012 and December 2016. We also linked opioid prescriptions to hospitalization and mortality data to examine the relative contributions of prescribed and non-prescribed opioids to opioid toxicity events in 2016. A recent opioid prescription was defined as a prescription with a days' supply that overlapped the opioid toxicity event. Analyses were stratified by gender and age.

Results

We examined 1.3 million prescriptions in the NMS during the study period: 72.8% for opioids, 21% for benzodiazepines, 4.4% for stimulants and <2% for other medications. Approximately 97% of prescriptions in the NMS could be linked because an Ontario health card was used at the time of dispensing. In 2016, we found that 52.8% of individuals with an opioid-related hospitalization (N=804/1,524) and 32.5% of those with an opioid-related death (N=278/855) had a recent opioid prescription. The proportion of opioid-related hospitalizations and deaths with a recent opioid prescription was significantly higher among females vs. males (57.2% vs. 48.0% and 45.6% vs. 26.4%, respectively; $p < .001$), and older

(aged 45-64) vs. younger (aged 0-24) individuals (66.9% vs 9.9% and 46.4% vs 11.6% respectively; $p < .001$).

Conclusion/Implications

Linkage was possible for the majority of prescriptions in the NMS. We found that a large proportion of opioid overdoses involved a non-prescribed opioid, particularly among men and younger individuals. These findings highlight an important difference in patterns of opioid use and toxicities in the population that policy-makers should consider.