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Perinatal Opioid Use: Improving Insights through Federated Analysis of Linked Administrative Data

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Objectives

Linked administrative data from 5 Canadian provinces were harmonized for the Canadian Perinatal Opioid Project, a nationally funded project. Using these data, we estimated opioid prescribing patterns during/after pregnancy at the national level and conducted cross-provincial comparisons.

Approach

This population-based cohort study used linked administrative health records from Alberta, British Columbia, Manitoba, Ontario, and Saskatchewan. Included were all pregnancies to individuals aged 12-50 years, 2013-2023. Opioid use and prescribing patterns (type, duration, dose, timing) were measured from conception through to 1-year after the end of pregnancy. We conducted federated and province-specific analyses to produce pan-Canadian estimates of perinatal opioid use. Poisson models analyzed trends in perinatal opioid use and generated adjusted relative risks (aRR) of perinatal opioid use by socio-demographic and clinical factors. This research is being conducted in collaboration with people with lived/living experience.

Results

Data from Alberta Health Services/Alberta Health, PopDataBC, Manitoba Centre for Health Policy, ICES, and Health Research Data Platform-Saskatchewan were harmonized. Federated data analyses are underway and will be completed by May 2026. We anticipate 3.2 million pregnancies (325,000 pregnancies/year). Preliminary analyses from Ontario show the prevalence of prenatal opioid exposure is 4.1% based on 1.6 million pregnancies.

Conclusions/Implications

Improving health system data access through multi-regional research using harmonized administrative data addresses important knowledge gaps and will generate the first pan-Canadian estimates of perinatal opioid use. This information is needed to inform prevention efforts, harm reduction, and tailored interventions for people who use opioids during/after pregnancy.

