

The Great Lakes Effect: Discovering Hot Spots for Rates of Diversion of Prescription Opioids within Ontario, Canada.

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Introduction

- Prescription opioid abuse in Ontario is an increasing public health concern.
- This study examines population rates for several opioid active pharmaceutical ingredients (API) across all Ontario census divisions to assess patterns of diversion.

Methods

- The Drug Diversion Program surveys law enforcement agencies in Ontario who report on new cases of prescription drug diversion during the past three months.
- Quarterly data were collected between October 2014 and September 2016.
- Cumulative population rates of diversion were calculated for census divisions (intermediate geographic areas between the levels of province and municipality) by API.
- Quarterly population estimates were obtained by extrapolating from the 2006 and 2011 Canadian censuses at the census division level.
- Population rates were calculated by dividing the sum of quarterly diversion cases by the sum of the quarterly covered population of a census division.
- The population rates in each covered census division were ranked and the top five were compared for the following APIs: buprenorphine, fentanyl, hydromorphone, morphine and oxycodone.

Results

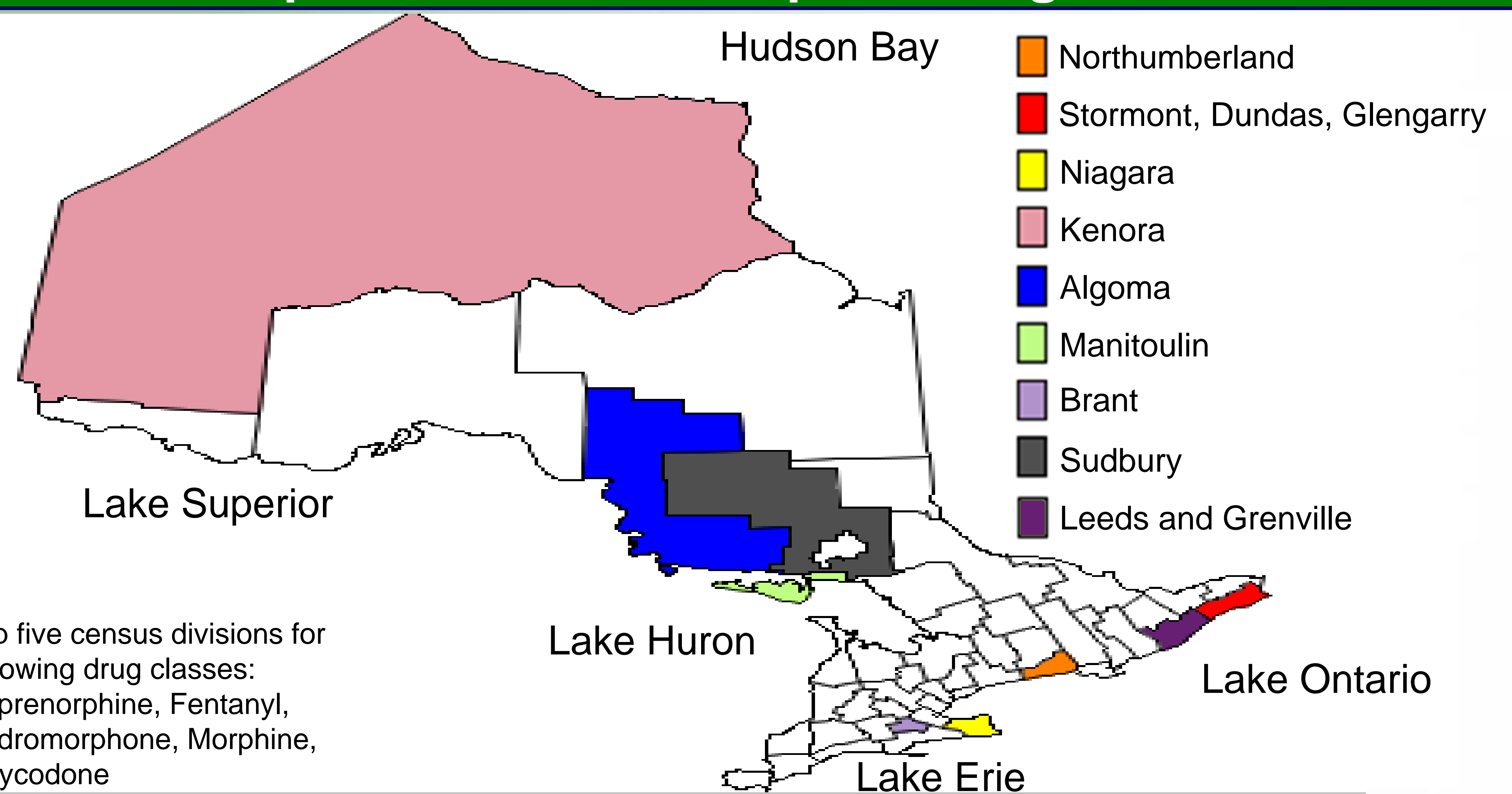
- Manitoulin had the highest population rates for diversion of hydromorphone, morphine, and oxycodone (Table 1).
- Other census divisions within the top five population rates of diversion of the APIs investigated included Northumberland, Algoma, Brant, Leeds and Grenville, and Stormont, Dundas, and Glengarry, Niagara, Sudbury and Kenora.

Rates of Opioid Diversion

by Top 5 Census Divisions (per 100,000 population)

Buprenorphine	Fentanyl	Hydromorphone	Morphine	Oxycodone
Algoma (0.55)	Northumberland (6.65)	Manitoulin (52.09)	Manitoulin (11.61)	Manitoulin (11.69)
Stormont, Dundas and Glengarry (0.44)	Manitoulin (5.88)	Brant (9.45)	Algoma (1.63)	Northumberland (5.89)
Leeds and Grenville (0.27)	Brant (1.9723)	Leeds and Grenville (4.53)	Northumberland (1.36)	Brant (4.88)
Niagara (0.07)	Algoma (1.9721)	Northumberland (3.51)	Leeds and Grenville (0.79)	Sudbury (4.84)
Kenora (0.04)	Stormont, Dundas and Glengarry (1.47)	Stormont, Dundas and Glengarry (3.46)	Brant (0.43)	Algoma (3.06)

Ontario Top Five Census Division Population Rates of Opioid Drug Classes



Conclusions

- This study reveals that at least one of the highest population rates of included drug classes are concentrated along the census divisions that border the Great Lakes, specifically Lake Huron and Lake Ontario.
- A limitation of the Drug Diversion Program is that fewer than 100% of recruited reporters responded to the Canada Diversion Survey each quarter. In addition, given the pilot status of the program, report coverage is currently limited to the province of Ontario.