

Chronic and high dose opioid prescribing patterns for patients with non-cancer pain in primary care practices in Nova Scotia, Canada from 2011-2018

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Background

- Canadian opioid guidelines for non-cancer pain recommend safe practices such as limiting the dose of initial opioid prescriptions to < 90 morphine milligram equivalents (MME) daily to reduce known risks associated with chronic opioid therapy.
- Nova Scotia primary care providers contribute electronic medical record (EMR) data to the Canadian Primary Care Sentinel Surveillance Network for quality improvement and research.
- The objective was to analyze primary care opioid prescribing patterns from 2011-2018.

Methods

- Data were extracted from EMRs of 62 participating primary care providers.
- Patients ≥ 18 years old and had visited their primary care provider in the past 2 years were included.
- Patients with a cancer or palliative care diagnosis were excluded.
- Patients were categorized as prescribed any opioid, chronic opioid therapy (COT) or high-dose COT (HD-COT).
- COT defined as opioid prescriptions with a total duration of ≥ 84 days in each year.
- HD-COT was defined as opioid prescriptions > 90 MME per day on average in the COT group.
- Trends were analyzed using Cochran-Mantel-Haenszel statistics, Jonckheere-Terpstra Test and regression (SAS Version 9.4).

Results

- Approximately 350,000 patients (mean 44,553 patients/year) met inclusion criteria.
- Algorithm for coding opioid use limited records and refills to 100 days to comply with legislation in Nova Scotia.
- Patients prescribed any opioid, COT, and HD-COT significantly decreased over 2011-2018 (Table 1).
- Opioid doses did not significantly change for the overall COT and HD-COT cohort (Table 2).
- The top 8 prescribed opioids for all years are depicted in Figures 1 and 2. Tramadol/acetaminophen significantly increased in the HD-COT group.

Table 1. Patients receiving opioid prescriptions in participating NS primary care practices, 2011-2018

	2011	2012	2013	2014	2015	2016	2017	2018	P value
All eligible patients, n	41211	43418	43430	45194	46266	46316	45705	44880	
Any opioid use cohort, n	2377	2556	2660	2542	2545	2435	2381	2129	
Proportion of all eligible patients (%)	5.77	5.89	6.12	5.62	5.50	5.26	5.21	4.74	<0.0001
Chronic opioid therapy cohort, n	1016	1189	1230	1267	1252	1269	1230	1152	
Proportion of all eligible patients (%)	2.47	2.74	2.83	2.80	2.71	2.74	2.69	2.57	0.0178
High-dose chronic opioid therapy cohort, n	319	420	446	457	439	454	409	363	
Proportion of all eligible patients (%)	0.77	0.97	1.03	1.01	0.95	0.98	0.89	0.81	0.0002
Proportion of chronic opioid therapy cohort (%)	31.40	35.32	36.26	36.07	35.06	35.78	33.25	31.51	0.0471

Table 2. Opioid prescription daily doses in morphine milligram equivalents (MME)

	2011	2012	2013	2014	2015	2016	2017	2018	P value
Chronic opioid therapy daily MME, median	45.00	54.00	55.01	55.71	58.32	60.00	54.00	48.79	0.7359
IQR	16.10, 120.00	18.75, 140.00	20.25, 141.11	20.16, 151.36	20.00, 137.23	22.50, 139.29	20.00, 126.00	18.65, 120.56	
High-dose COT daily MME, median	197.63	199.67	199.66	205.80	202.50	192.25	180.00	180.00	0.0546
IQR	122.00, 360.00	133.39, 360.00	129.00, 353.08	135.00, 369.15	132.26, 360.00	129.49, 352.29	126.74, 311.54	129.38, 292.50	

Figure 1. Top 8 opioids prescribed among chronic opioid therapy patients

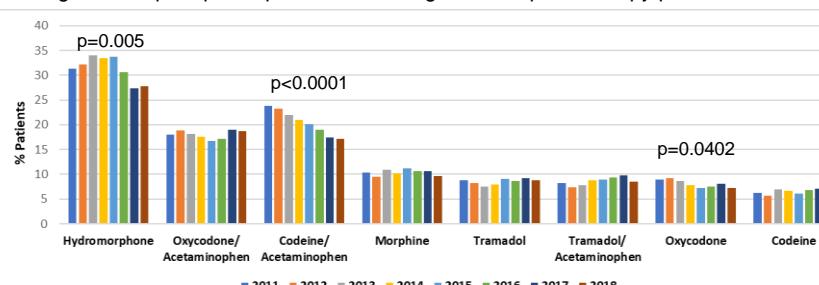
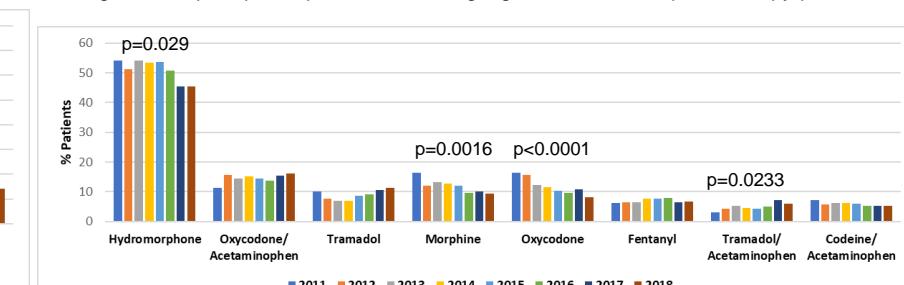


Figure 2. Top 8 opioids prescribed among high-dose chronic opioid therapy patients



Limitations

- EMR data completeness and accuracy
- Assumptions made during data cleaning

Conclusions

- The proportion of patients prescribed any opioid, COT, or HD-COT peaked in 2013 then significantly decreased in the following years.
- Hydromorphone, oxycodone, and codeine/acetaminophen prescriptions significantly decreased in the COT group.
- This data can help primary care providers compare their practice to their peers, identify high-risk patients, or prompt them to access resources needed to manage opioid therapy.
- Future research will examine the prevalence of urine drug screening and concurrent sedative/hypnotic therapy.

Conflict of Interest

The authors declare no conflicts.

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