Sep 01, 2022

High-risk postoperative opioid prescribing among chronic opioid users with Medicaid insurance

Limi Sharif[1], Vidhya Gunaseelan[1], Pooja Lagisetty[2], Mark Bicket[1], Jenn Waljee[3], Michael Englesbe[3], Chad Brummett[1]

[1]Department of Anesthesiology, University of Michigan, Ann Arbor, MI, USA;

[2]Division of General Medicine, University of Michigan, Ann Arbor, MI, USA;

[3]Department of Surgery, University of Michigan, Ann Arbor, MI, USA

1 Works for me Share

dx.doi.org/10.17504/protocols.io.3byl4jeeolo5/v1

Michigan Opioid Prescribing Engagement Network (OPEN)
Tech. support email: **MichiganOPEN@umich.edu**

vidhyag

ABSTRACT

The objective of this study is to assess the differences in high-risk prescribing among chronic opioid users with Medicaid and commercial insurance. Patients are included if they underwent one of eight procedural categories between November 6, 2017 and February 28, 2021 and had chronic opioid use in the year prior to surgery. The primary exposures of interest are insurance type and presence of a preoperative usual prescriber. Postoperative return to a usual prescriber within 30 days of discharge is also an exposure of interest in the analysis of high risk prescribing in patients who have a preoperative usual prescriber. The primary outcome is new postoperative high-risk prescribing. Secondary outcome is return to a usual prescriber within 30 days. Multivariable logistic regression models will be used to adjust for demographic and clinical differences between study groups.

DOI

dx.doi.org/10.17504/protocols.io.3byl4jeeolo5/v1

PROTOCOL CITATION

Limi Sharif, Vidhya Gunaseelan, Pooja Lagisetty, Mark Bicket, Jenn Waljee, Michael Englesbe, Chad Brummett 2022. High-risk postoperative opioid prescribing among chronic opioid users with Medicaid insurance. **protocols.io** https://protocols.io/view/high-risk-postoperative-opioid-prescribing-among-c-cfrvtm66

Citation: Limi Sharif, Vidhya Gunaseelan, Pooja Lagisetty, Mark Bicket, Jenn Waljee, Michael Englesbe, Chad Brummett High-risk postoperative opioid prescribing among chronic opioid users with Medicaid insurance https://dx.doi.org/10.17504/protocols.io.3byl4jeeolo5/v1

This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**

LICENSE

This is an open access protocol distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

CREATED

Aug 24, 2022

LAST MODIFIED

Sep 01, 2022

PROTOCOL INTEGER ID

69141

Brief rationale and hypothesis

1 Patients with chronic opioid use experience breakdowns in transitions of care following surgery; however, it is unclear what disparities exist in this process for patients on Medicaid when compared to patients with commercial insurance.

The key research question for this study is whether chronic-opioid users with Medicaid insurance at increased risk of high-risk opioid prescribing following surgery compared to those with commercial insurance.

Study Design

2 Retrospective cohort study using a statewide clinical registry linked to prescription drug monitoring system data

Data sources

3 Michigan Surgical Quality Collaborative (MSQC) Clinical Registry: The MSQC has a clinical registry with data on patient demographics, clinical characteristics, and 30-day postoperative outcomes for patients undergoing general surgery as well as a limited number of vascular and gynecologic surgery in Michigan. Participating hospitals receive funding from Blue Cross Blue Shield of Michigan to fund trained data abstractors that use standardized methods to obtain data for patients. Cases are audited annually for accuracy and reviewed using a sampling algorithm designed to minimize selection bias.

Prescription Drug Monitoring System (PDMP): The PDMP tracks prescription fills of all controlled substances by patients in the state of Michigan. Within this system, each prescription fill is associated with the patient who filled the prescription.

Data from MSQC was linked with the prescription fills in the PDMP. The linkage of data between the two systems followed a state-approved process and was accomplished through

Citation: Limi Sharif, Vidhya Gunaseelan, Pooja Lagisetty, Mark Bicket, Jenn Waljee, Michael Englesbe, Chad Brummett High-risk postoperative opioid prescribing among chronic opioid users with Medicaid insurance
https://dx.doi.org/10.17504/protocols.io.3byl4jeeolo5/v1

This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**

an independent third-party data broker.

Inclusion criteria

4 1. Adult patients (18 years of age and older) with preoperative chronic opioid use undergoing surgery between 11/06/2017 and 02/28/2021. Preoperative chronic opioid use is defined as > 120 total days supplied OR ≥ 10 prescriptions in the 365 to 1 days prior to admit to surgery (Similar to Sun et al., *JAMA Intern Med.*,2016)
2. The surgical procedures included are: Open or laparoscopic appendectomy, laparoscopic cholecystectomy, open or laparoscopic colectomy, open or laparoscopic minor hernia repair, open ventral or incisional hernia repair, vaginal, laparoscopic, and abdominal hysterectomy
3. Patients with commercial or medicaid insurance
4. Patients who reside in Michigan (out of state controlled substance fills are not captured by the PDMP in Michigan)

Exclusion criteria

5 1. Patients with discharge destination other than home
2. Patients with length of stay >14 days
3. Patients who died within 30 days of index surgery
4. Patients who had reoperations within 30 days of index surgery
5. Patients who were readmitted within 30 days of index surgery
6. Patients who had complications within 30 days of index surgery
7. Patients who matched to more than one patient in PDMP

Explanatory variables

6 1. Key Independent Variable: Insurance type (Commercial, Medicaid), preoperative usual prescriber (for appropriate models); postoperative return to usual prescriber within 30 days (for appropriate models)
2. Demographics (Age, sex, race/ethnicity)
3. Comorbidities (Tobacco use, cancer, BMI, ASA class)
4. Clinical characteristics (Surgery priority – elective vs emergent/urgent, inpatient vs outpatient)
5. Procedure: Laparoscopic cholecystectomy, Appendectomy, Minor hernia repair (open/laparoscopic), Vaginal hysterectomy, minimally invasive hysterectomy, Open ventral/incisional hernia repair, Laparoscopic/open colectomy, Abdominal hysterectomy
6. Binary variable for discharge during COVID (Mar 11, 2020 – Dec 15, 2020)

Primary outcome

7 New high risk opioid prescribing defined as at least of the following within 120 days following discharge:
- new overlapping opioid prescribing
- new overlapping benzodiazepine and opioid prescribing
- new high daily doses (≥ 100 OME 91-120 days after surgery for patients on < 100 OMEs daily prior to surgery)
- new multiple prescribers (≥ 3)
- new long-acting opioids

Citation: Limi Sharif, Vidhya Gunaseelan, Pooja Lagisetty, Mark Bicket, Jenn Waljee, Michael Englesbe, Chad Brummett High-risk postoperative opioid prescribing among chronic opioid users with Medicaid insurance
https://dx.doi.org/10.17504/protocols.io.3byl4jeeolo5/v1

This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**

(similar to Lagisetty et al., *Ann Surg.,* 2020).

Secondary outcome

8 Return (prescription following discharge from usual prescriber) to usual prescriber within 30 days of discharge from index surgery. Usual prescriber is defined as the provider who prescribes >=50% of opioid prescriptions in the 365 to 1 days prior to admit to surgery.

Statistical analysis

9 1. Descriptive analysis of patients with Medicaid compared with commercial insurance
2. Descriptive analysis preoperative high-risk prescribing in patients with and without a usual prescriber by insurance type. Univariate analysis to assess differences between those with Medicaid and commercial insurance.
3. Multivariable logistic regression of new postoperative high-risk prescribing with presence of preoperative usual prescriber and insurance type as the covariates of interest.
4. Cox proportional hazards regression to model time to return to usual prescriber within 30 days of discharge
5. Multivariable logistic regression of new postoperative high risk prescribing in patients with a usual prescriber with return to prescriber within 30 days and insurance type as the covariates of interest.

Sensitivity analysis:

1. Multivariable logistic regression of any (new or continued) postoperative high-risk prescribing with presence of preoperative usual prescriber and insurance type as the covariates of interest.
2. Multivariable logistic regression of any (new or continued) postoperative high risk prescribing in patients with a usual prescriber with return to prescriber within 30 days and insurance type as the covariates of interest.

Supplemental analysis:
Descriptive analysis of preoperative usual prescriber specialty in patients with Medicaid compared to commercial insurance.

Limitations

10 1. Retrospective study
2. Data from a single state (but large data set, with representation from 70 different hospitals)
3. Using opioid prescriptions filled as a proxy for opioids consumed (using MAPS data)
4. Additional confounding variables
5. Cannot assume causal relationship

Citation: Limi Sharif, Vidhya Gunaseelan, Pooja Lagisetty, Mark Bicket, Jenn Waljee, Michael Englesbe, Chad Brummett High-risk postoperative opioid prescribing among chronic opioid users with Medicaid insurance
https://dx.doi.org/10.17504/protocols.io.3byl4jeeolo5/v1

This is an open access protocol distributed under the terms of the **Creative Commons Attribution License**