



Abstract: 5064

Scientific Abstracts > Chronic Pain

# Associations Between Preoperative Opioid Prescriptions and Post-Hospital Discharge Disposition: A Population-Based Cohort Study

Savannah Whitfield, Nafisseh Warner, Michael Hooten, Maria Mendoza De La Garza, Andrew Hanson, Alexander Schmidt, Erica Bellamkonda  
Mayo Clinic

## Introduction

Preoperative opioid use is common in spine surgery and is linked with higher postoperative opioid consumption, longer hospitalizations, increased healthcare expenses, and greater risk of surgical revisions. However, it remains unclear whether preoperative opioid availability is associated with post-hospitalization discharge disposition after major spinal surgery, which may serve as an indicator of postoperative functional recovery. The objective of this study was to evaluate the association between preoperative opioid availability and discharge disposition after major spine surgery. Secondarily, we evaluate associations between discharge disposition and opioid availability through 1-year postoperatively.

## Materials and Methods

This is a retrospective population-based cohort study incorporating comprehensive prescription opioid information for 2223 adults (age  $\geq 18$  years) undergoing spine surgery in Olmsted County, Minnesota, from January 1, 2005, through December 31, 2016. Multivariable models were employed to assess associations between preoperative opioid exposures, postoperative opioid exposures, and discharge disposition (home, rehabilitation facility [RF], skilled nursing facility [SNF]). Approval was obtained from the institutional review boards of the Mayo Clinic and Olmsted Medical Center, Rochester, Minnesota, which waived requirement for written informed consent because of minimal patient risk.

## Results/Case Report

2223 adults were included with the following preoperative opioid availability: none (778 [35.0%]), short-term (1118 [50.3%]), episodic (227[10.2%]), and long-term (100[4.5%]). Discharge dispositions were home (1984 [89.2%]), RF (94 [4.2%]), and SNF (145 [6.5%]). Compared to patients with no preoperative opioid availability, those with short-term or episodic opioid availability were less likely to be discharged to a RF (OR, 0.56 [95% CI, 0.36-0.87];  $p = 0.010$ ), but no significant association was observed with SNF discharge (OR, 1.26 [95% CI, 0.83-1.91];  $p = 0.282$ ). Patients with long-term opioid availability had significantly increased odds for SNF discharge (OR, 2.93 [95% CI, 1.39-6.17];  $p = 0.005$ ), but no significant association with RF discharge (OR, 0.61 [95% CI, 0.21-1.79];  $p = 0.365$ ). In the one-year

follow-up, patients discharged to RF had an increased likelihood of developing long-term postoperative opioid availability compared to those discharged home (OR, 12.49 [95% CI, 4.84-32.24; p= 0.001]).

## Discussion

Preoperative opioid prescribing is linked to post-hospitalization discharge disposition, which in turn is linked with opioid prescribing patterns 1-year after surgery. Assessing opioid prescribing trends prior to surgery may inform discussions regarding anticipated discharge disposition following spine surgery.

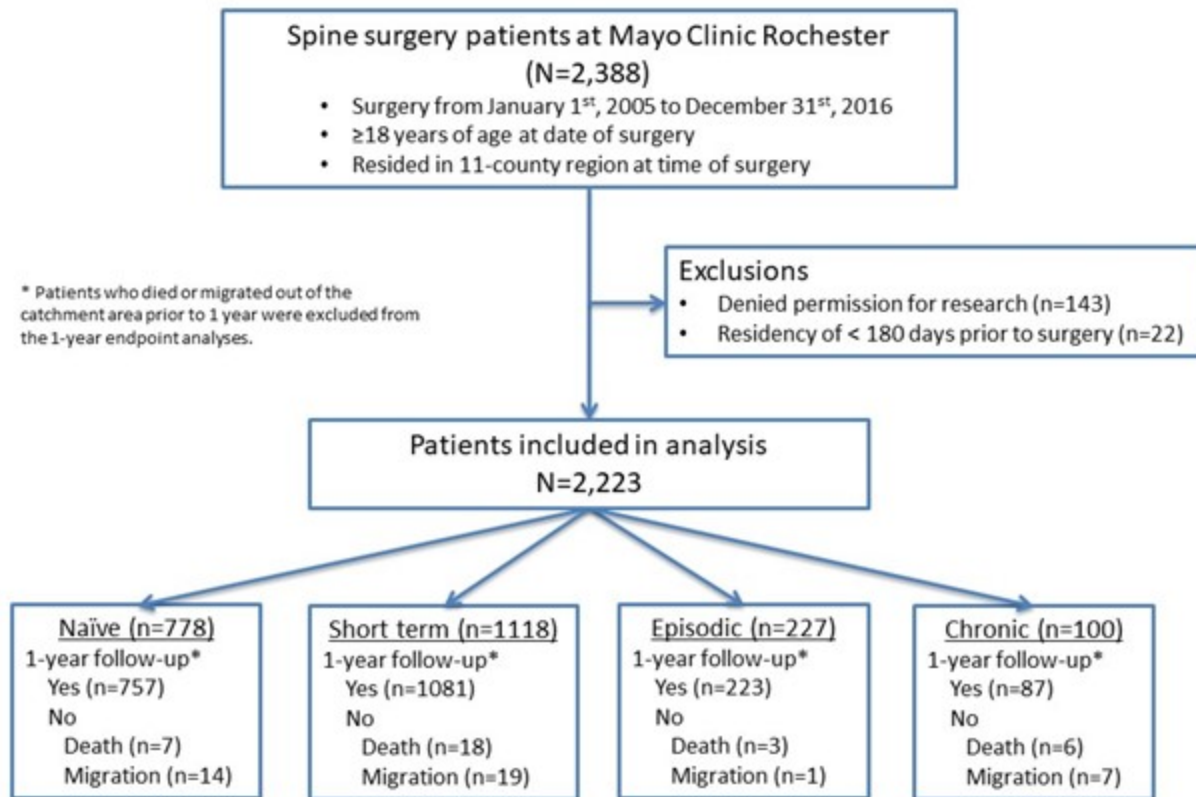
## References

1. Walid MS, Hyer L, Ajjan M, Barth AC, Robinson JS Jr. Prevalence of opioid dependence in spine surgery patients and correlation with length of stay. *J Opioid Manag.* 2007;3(3):127-132. doi:10.5055/jom.2007.0050
2. Eastlack RK, Ledesma JB, Tran S, et al. Home Versus Rehabilitation: Factors that Influence Disposition After Minimally Invasive Surgery in Adult Spinal Deformity Surgery. *World Neurosurg.* 2018;118:e610-e615. doi:10.1016/j.wneu.2018.06.249
3. Kanaan SF, Yeh HW, Waitman RL, Burton DC, Arnold PM, Sharma NK. Predicting discharge placement and health care needs after lumbar spine laminectomy. *J Allied Health.* 2014;43(2):88-97.
4. Warner NS, Finnie D, Warner DO, et al. The System Is Broken: A Qualitative Assessment of Opioid Prescribing Practices After Spine Surgery. *Mayo Clin Proc.* 2020;95(9):1906-1915. doi:10.1016/j.mayocp.2020.02.027

## Disclosures

No

## Tables / Images



**Table 2 – Estimated association between pre-operative opioid availability and discharge disposition\***

Exposure variable	Discharge disposition outcome			
	Discharged to rehabilitation		Discharged to skilled nursing facility	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Preoperative opioid availability				
None	Referent		Referent	
Short-term or episodic	0.56 (0.36, 0.87)	0.010	1.26 (0.83, 1.91)	0.282
Long term	0.61 (0.21, 1.79)	0.365	2.93 (1.39, 6.17)	0.005

\* Results are from multivariable generalized logistic regression. Multiplicative increase in odds for the given outcome vs. discharge to home with or without home health care associated with the given preoperative opioid availability group and corresponding p-values are presented. Covariates included are age (spline with 2 degrees of freedom), sex, Charlson score (log), and date of surgery.

