



Reducing post-operative opioid use after anterior cruciate ligament reconstruction through EPIC order sets



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AIM Statement:

The goal of this project is to create a data-informed, post-operative pain order set to reduce the amount of opioid-containing medications prescribed for anterior cruciate ligament reconstruction in the HealthPartners system, without compromising patient satisfaction.

Introduction

- Currently an opioid epidemic in the United States
- 80% of current opioid users introduced through prescriptions
- Orthopaedic surgeons are the 3rd highest prescribers of opioid containing medications in the United States
- 42-71% of all opioid tablets went unused, whether due to adequate pain control or opioid-induced side effects
- Opioid prescribing practices vary significantly, excess opioid pills are prescribed and diverted to non-medical opioid users.

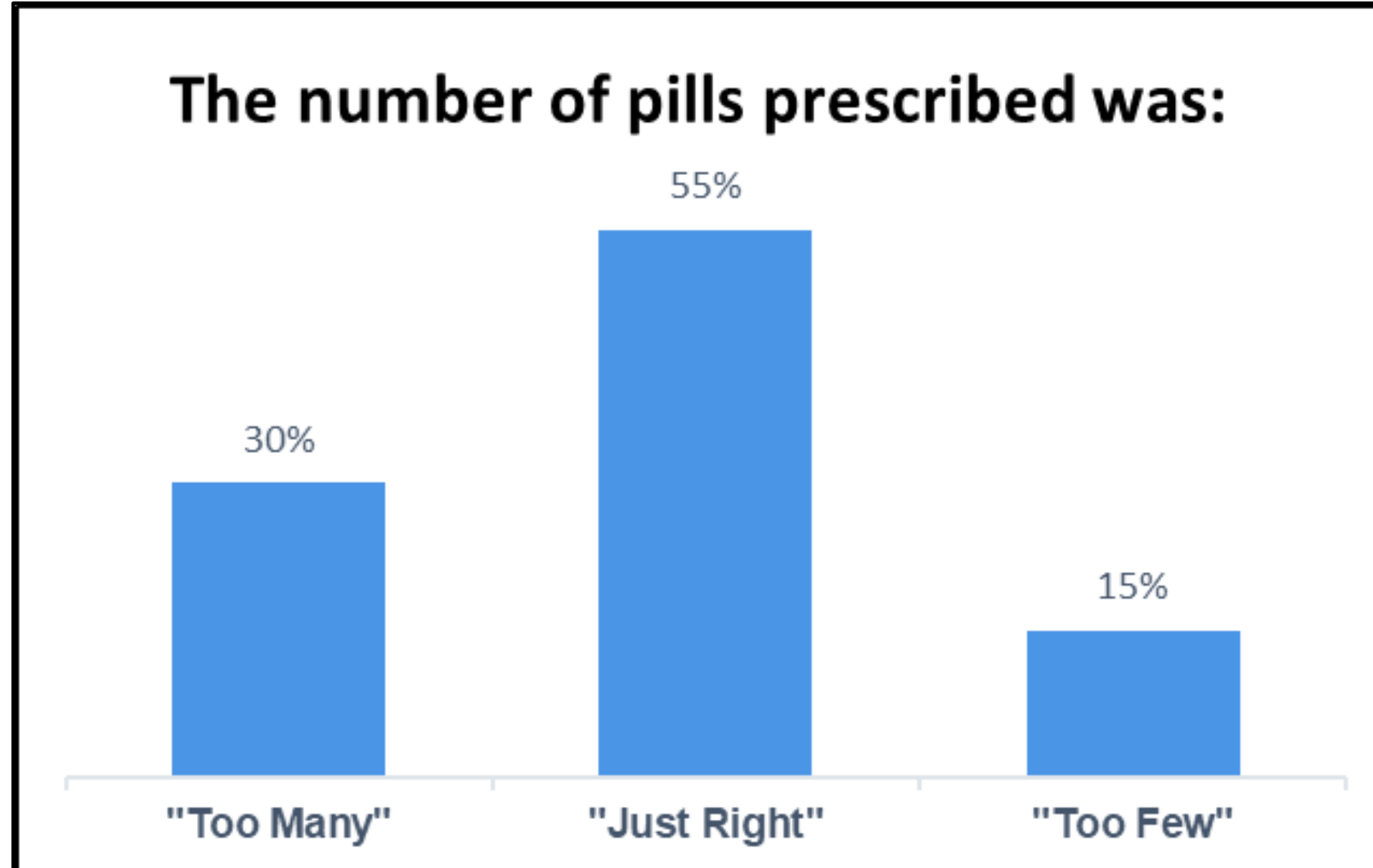
Methods

- Included all patients undergoing anterior cruciate ligament reconstruction (ACLR) as part of a quality measure
 - Included fourteen surgeons at three outpatient surgery centers
- Patients anonymously completed questionnaires regarding pain control at first post-operative visit
 - Collected assessments over 7-month period

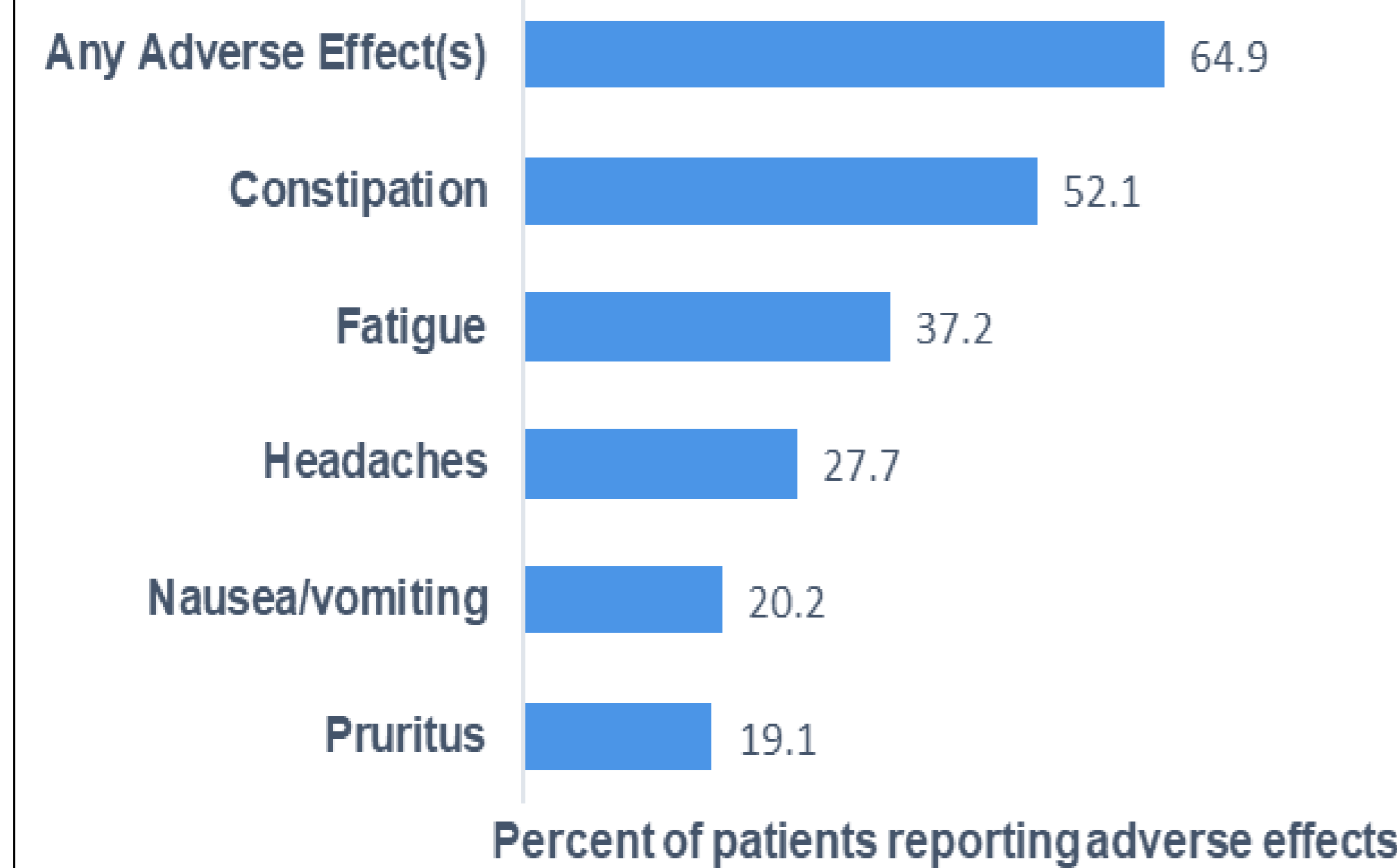
We are trying to understand more about our patients' experience with pain after surgery. Your participation will help us improve the care we provide our patients. Thank you for taking a moment to fill out this questionnaire.

- How satisfied are you with your pain management after surgery?**
 1 Very Dissatisfied 2 Dissatisfied 3 Neutral 4 Satisfied 5 Very Satisfied
- Rate the most intense pain you had after surgery.**
 0 No pain at all 1 2 3 4 5 6 7 8 9 10 Worst pain imaginable
- How did the amount of pain you experienced compare to what you expected?**
 I had less pain than I expected I had as much pain as I expected I had more pain than I expected
- The total number of opioid pain pills I've taken since my surgery is about:** _____
- The number of pills prescribed was:**
 Too few Just right Too many
- Did you take opioid pain pills in the two weeks prior to your surgery?**
 Yes No
- Did you experience any negative side effects from taking the prescription pain medicine?**
 No → Thank you for completing this questionnaire Yes → Proceed to question 7
- If yes, what were they?**
 Constipation
 Fatigue or feeling sleepy
 Feeling itchy
 Hallucination or altered judgement
 Headache/ light headed
 Nausea, vomiting, stomach upset
 Other: _____

Number of pills taken	Mean	Median	Range
	26	25	0-70



Adverse Effects of Opioid Medications



Results

- 94 surveys were collected; none excluded from analysis
- Mean number of pills reported was 26 (n= 82)
- 67% of patients reported taking 30 or fewer pills
- 30% reported they were prescribed too many pills
- Opioid use in two weeks prior to surgery did not statistically impact the amount of pills reported (n= 6)
- Averaged "most intense post-op pain experience" was 7.4/10
- 64.9% of patients reported adverse effects from opioid medications
 - 80.9% rated a 4 or 5

Conclusions

- 30 opioid-containing tablets is a reasonable standard prescription
 - Converts to 150-240 MME depending on the medication
- Most patients were satisfied with their pain management using opioid medications, but there is still burden of adverse effects
 - Only 15% of people previously found the amount to be too few
 - Adverse effects also addressed in order set
- Meeting with prescribers to individualize the order set improved adherence

Next Steps

- Compare patient-reported use with the amount of pills prescribed
- Collect post-intervention pain assessments
- Analyze for primary outcome of reduced reported opioid use
- Analyze for secondary outcome of maintained patient satisfaction
- Potentially lower the number of tablets in the order set based on future results

References:

Bicket, M. C., Long, J. J., Pronovost, P. J., Alexander, G. C., & Wu, C. L. (2017). Prescription opioid analgesics commonly unused after surgery: a systematic review. *JAMA surgery*, 152(11), 1066-1071.

Lovechhio F, et. al. Support for Safer Opioid Prescribing Practices-A catalog of published use after orthopaedic surgery. *J Bone Joint Surg Am.* 2017;99:1945-55

TRIA ACL Reconstruction Surgery Post Op Pain [3233]

NURSING

Discharge Instructions

1. You should take the first dose of pain medication before the anesthetic wears off. Qty-1, Normal, Routine
2. Pain in the first 3 days is not dangerous nor a sign of something going wrong. Qty-1, Normal, Routine
3. Ice can be very helpful in stopping pain. Apply an ice pack to your knee 20 minutes every hour while awake. Qty-1, Normal, Routine
4. Refer to the Recover Well handout in your discharge materials for other strategies for managing pain. Qty-1, Normal, Routine
5. Dispose of unused pain medications if you haven't used them for 3 days. Use the disposal pouch you received at the time of surgery. Qty-1, Normal, Routine
6. DO NOT DRIVE while you are taking narcotic pain medication. Qty-1, Normal, Routine

MEDICATIONS

PACU/Prior to Discharge Medications

- acetaminophen (TYLENOL) tablet 1,000 mg, Oral, ONCE, Starting today, For 1 Doses, Post-op
- ketorolac (TORADOL) injection 30 mg, Intravenous, ONCE, Starting today, For 1 Doses, Post-op
- ondansetron (ZOFRAN) injection 4 mg, Intravenous, ONCE, Starting today, For 1 Doses, Post-op

DISCHARGE

Discharge Medications

- oxycODONE (ROXICODONE) 5 MG immediate release tablet 30 Tablet, 0, Normal
- HYDRomorphine (DILAUDID) 2 MG tablet 30 Tablet, 0, Normal
- tramADol (ULTRAM) 50 MG tablet 30 Tablet, 0, Normal
- HYDRocodone-acetaminophen (NORCO) 5-325 MG tablet 30 Tablet, 0, Normal
- oxycODONE-acetaminophen (PERCOCET) 5-325 MG tablet 30 Tablet, 0, Normal
- oxycODONE (ROXICODONE) 1 MG/1ML solution 0, Normal
- acetaminophen (TYLENOL) 500 MG tablet 100 Tablet, 0, Normal
- ibuprofen (MOTRIN) 200 MG tablet 100 Tablet, 0, Normal
- celecoxib (CELEBREX) 200 MG capsule 20 Capsule, 0, Normal
- ketorolac (TORADOL) 10 MG tablet 30 Tablet, 0, Normal
- bisacodyl (DULCOLAX) 5 MG enteric coated tablet 20 Tablet, 0, starting 12/7/18, Oral, Normal
- sennosides-docusate sodium (SENNA-5, SENNA PLUS) 8.6-50 MG per tablet 20 Tablet, 0, Normal
- ondansetron (ZOFRAN-ODT) 4 MG disintegrating tablet 10 Tablet, 0, Normal
- hydrOXYzine HCl (ATARAX) 25 MG tablet 15 Tablet, 0, Normal
- melatonin 3 MG tablet 100 Tablet, 0, Normal

Project Timeline:

