

Evaluation of Opioid Prescribing Behaviors and Consumption following Coronary Artery Bypass Grafting

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Evaluation of Opioid Prescribing Behaviors and Consumption following Coronary Artery Bypass Grafting

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Background

- The US has been faced with an opioid epidemic with annual opioid overdose deaths in 2018 more than four times greater than in 1999.¹
- Physicians' opioid prescribing behaviors are among the first areas of scrutiny, specifically post-operative setting.²⁻¹⁰
- Many QI projects have reduced opioids prescribed in the post-operative setting, but few literature focuses on cardiac surgery.¹¹⁻¹⁶
- This QI project sought to identify opioids prescribed in excess and implement standardized order sets for opioids following cardiac surgery.

Problem Statement

The absence of standardized opioid prescribing protocols post-coronary artery bypass grafting at LVHN may result in opioids prescribed in excess to CABG patients, increasing opportunity for opioid diversion into the community.

Methods

Needs Assessment

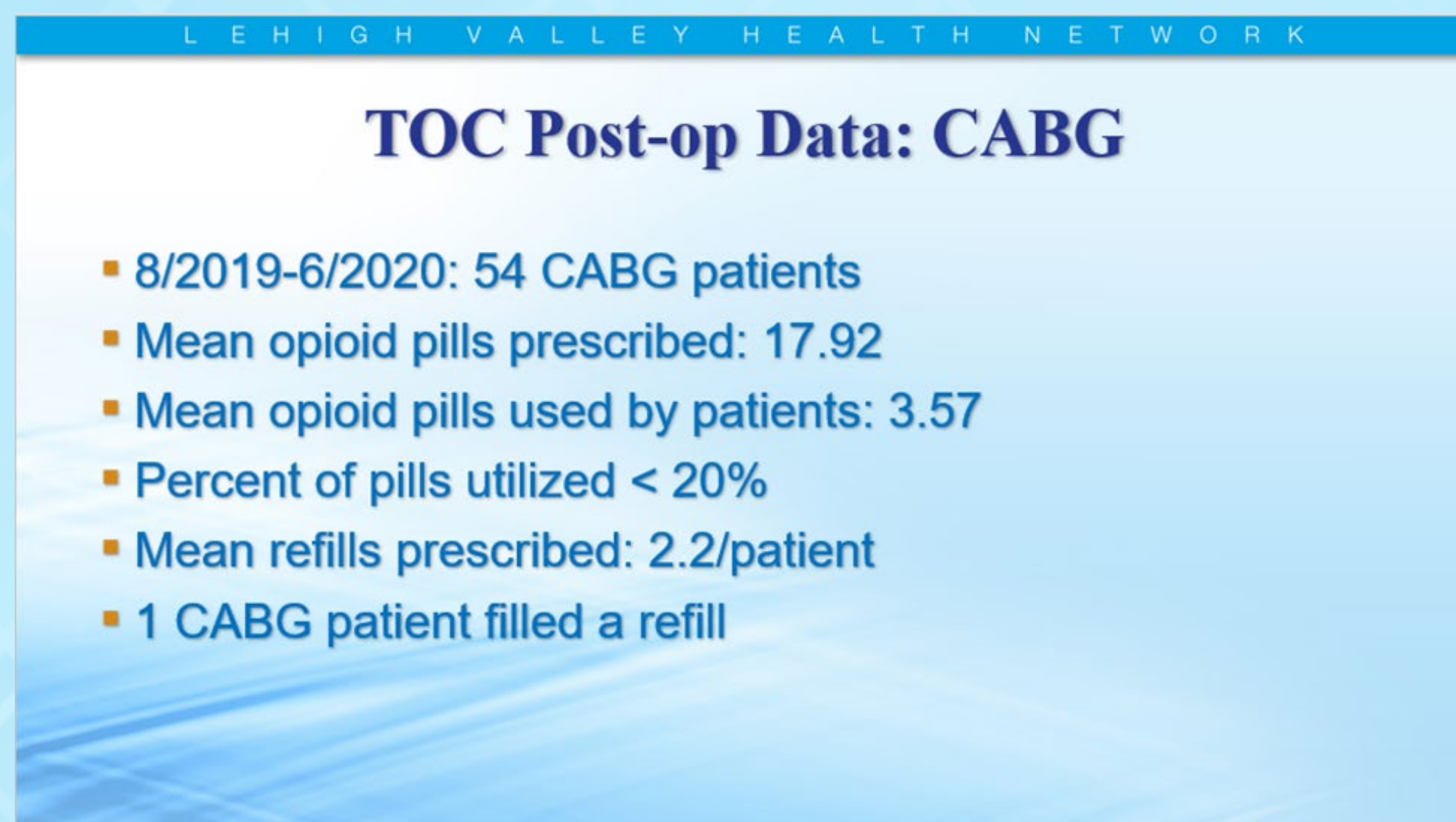
- Nurses from Transition of Care (ToC) team contacted patients after discharge following admission for CABG to assess patient opioid utilization.
- Data including opioid pill quantity prescribed and 30-day opioid refills were collected using chart review on the electronic medical records system.

Intervention

- A meeting between the project team and the cardiothoracic surgery department leadership to share the data discovered in the needs assessment.
- Design and implementation of standardized opioid taper order sets.
- Intervention success tracked using electronic medical record dashboard of key de-identified metrics.

Results

Needs Assessment Results

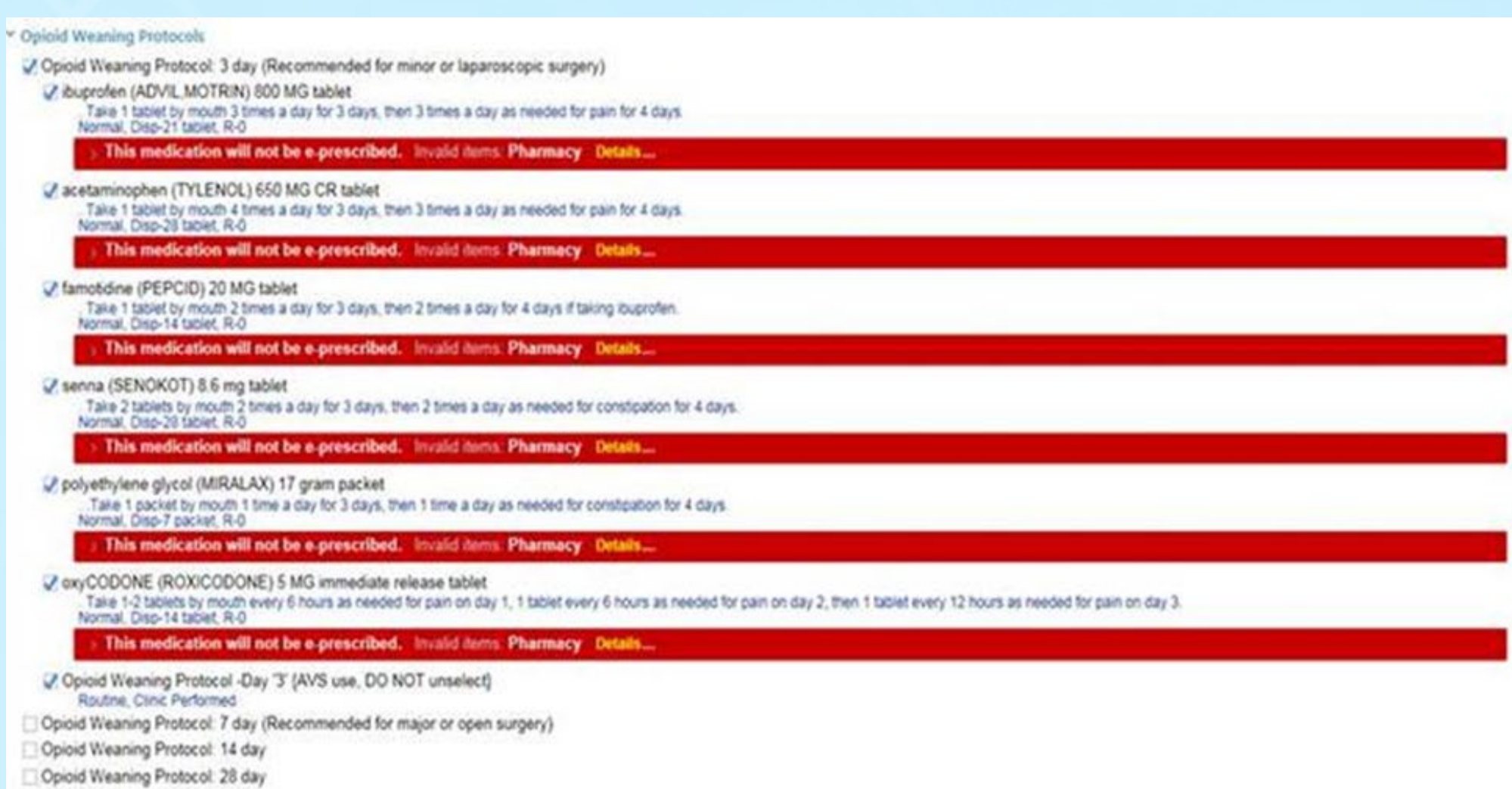


Intervention Results

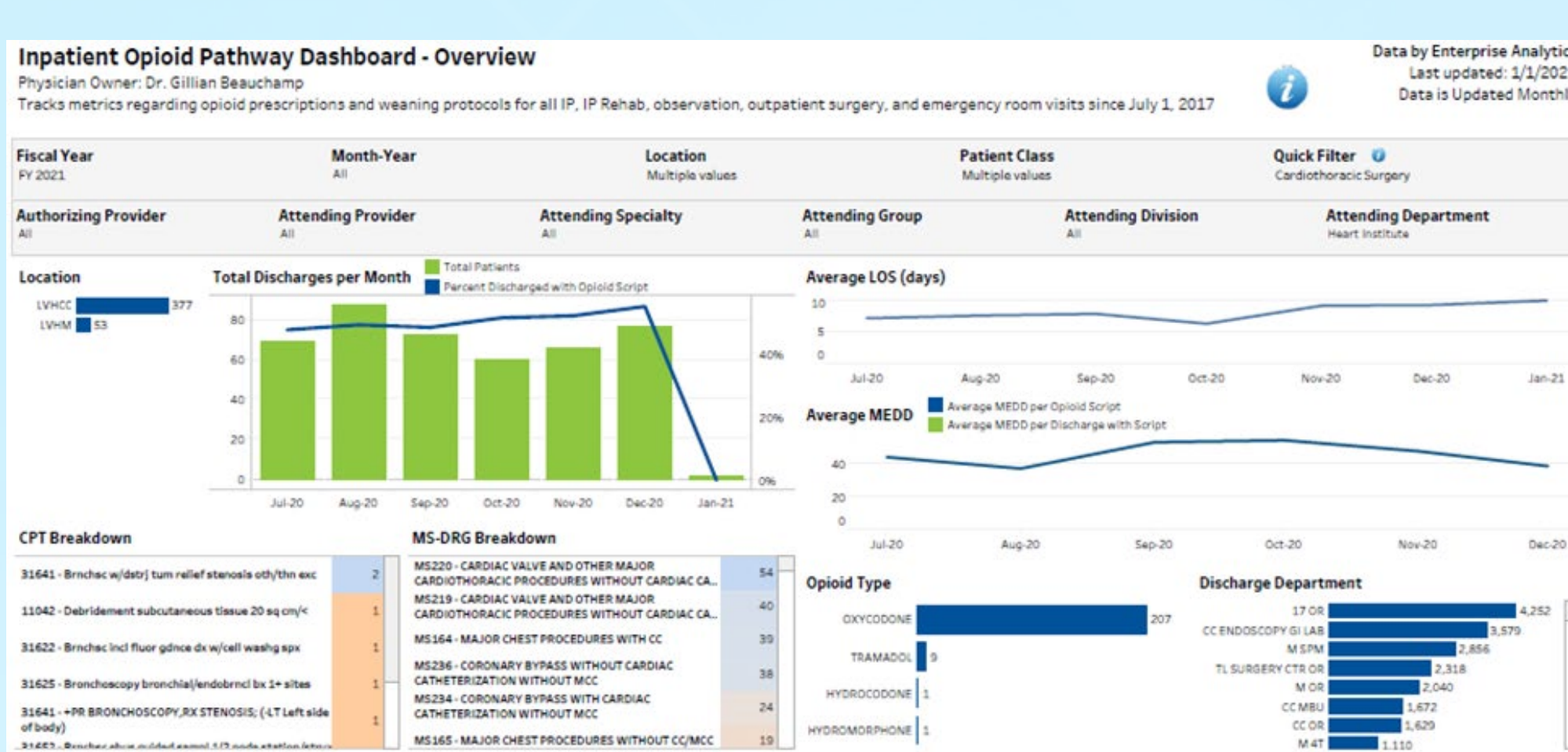
- 7/2020-12/2020: 261 consecutive cardiothoracic surgery patients

Pre-Intervention	2 Months Post-Intervention
23.33 opioid pills per prescription	19.88 opioid pills per prescription
44.24 MMED per prescription	38.75 MMED per prescription
0% opioids ordered using order set	14.49% opioids ordered using order set
24.24% 30-day opioid refill	7.14% 30-day opioid refill
12.12% 30-day return to emergency department	4.70% 30-day return to emergency department

Standardized Order Sets Screenshot



Opioid Dashboard Screen Shot



Discussion

- The project is the first in the literature to use patient data to demonstrate opioid prescribing in excess to encourage physician participation in opioid stewardship.
- Patient data and standardized opioid prescriptions with tapers allowed cardiothoracic surgeons to successfully reduced quantity of opioid prescribed.
- Utilization of order sets by physicians remained low

SELECT Principles

- Focused on patient values by utilizing nurses to elicit patients' opioid utilization and pain data.
- Required leadership skills to create urgency and communicate the vision for change to cardiothoracic department.
- Utilized a health systems approach to reduce opioid diversion through implantation of standardized order sets and a dashboard.

Conclusions

- Utilizing patient data and implementing standardized order opioid order sets are effective strategies for reducing the quantity of opioids prescribed post cardiac surgery
- Electronic medical record dashboards with de-identified data allow continued quality improvement.
- Future projects could explore developing order sets in collaboration with the surgeon to increase order set utilization.

REFERENCES

1. CDC/NCHS. *National Vital Statistics System*. Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2018. <https://www.data.cdc.gov/>.
2. Snicklen B, Lynch M, Pacella CB, Yealy DM, Callaway CW. The Effect of a Statewide Mandatory Prescription Drug Monitoring Program on Opioid Prescribing by Oregon Primary Care Physicians: A Retrospective Cohort Study in 15 Hospitals in a Single Health System. *J Pain*. 2019;19(4):430-438.
3. Sufletor GK, Krueger PW, Huelga BJ, Doyle E, Palouzzi LC. Opioid Prescribing behaviors — Prescription Behavior Surveillance System, 11 States, 2010-2016. *MMWR Surveill Summ* 2020;69(Nb: SS-1):1-14.
4. Hedberg, Katrina MD, MPH; Bai, Lisa T. MBA; Livingston, Catherine MD, MPH; Shields, Lisa M. BA; Van Otterloo, Joshua MSPH. Integrating Public Health and Health Care Strategies to Address the Opioid Epidemic-The Oregon Health Authority's Opioid Initiative. *Journal of Public Health Management and Practice* 2019; 25(3):214-220.
5. Bickel MC, Long JJ, Pronovost PJ, Alexander GC, Wu CL. Prescription Opioid Analgesics Commonly Unused After Surgery: A Systematic Review. *JAMA Surg*. 2017;152(11):1066-1071.
6. Results of a Prospective, Multisite Initiative Aimed at Developing Opioid-prescribing Guidelines After Surgery. *Annals Of Surgery [Ann Surg]* 2018 Aug; Vol. 268 (3), pp. 457-468.
7. Maureen V. Hill, Michelle L. McMahon, Ryland S. Stucke, Richard J. Barth, Jr. Wide Variation and Excessive Dosage of Opioid Prescriptions for Common General Surgical Procedures. *Ann Surg* 2016 Sep 14.
8. Wick EC, Sehgal NL. A Learning Health System Approach to the Opioid Crisis: Never Let a Good Crisis Go to Waste. *JAMA Surg*. 2018;153(10):954.
9. Colon, J. B., Fujii, M. H., Allen, T. P., MacLenn, C. D., Lahiri, J. E., Alef, M., Bertges, D. J. (2019). Postoperative opioid prescribing patterns and use after vascular surgery. *Vascular Medicine*, 24(1), 63-70.
10. Blay E Jr, Nooromid MD, Bilimoria KY, et al. Variation in post-discharge opioid prescriptions among members of a surgical team. *Am J Surg*. 2018;216(1):25-30.
11. Matthews J, Ziegelmann, Jason P. Joseph, Amy E. Glessman, Mark D. Tyson, Raymond W. Pak, Halena M. Gazeika, Ashton L. Schatz, Bradley C. Leitwisch, Elizabeth B. Haberman, Matthew T. Gittingman. Wide Variation in Opioid Prescribing After Urological Surgery in a Specialty Care Centers. *Mayo Clin Proc*. 2019 Feb; 94(2): 362- 374.
12. Howard R, Waljee J, Brummett C, Englesbe M, Lee J. Reduction in Opioid Prescribing Through Evidence-Based Prescribing Guidelines. *JAMA Surg*. 2018;153(2):185-192.
13. Tong K, Nolan, W., O'Sullivan, D.M., Sheiner, P. and Kutzler, H.L. (2019), Implementation of a Multimodal Pain Management Order Set Reduces Perioperative Opioid Use after Liver Transplantation. *Pharmacotherapy*, pp. 975-982.
14. Schommer J, Allen S, Schole N, Reams M, Bohn D. Evaluation of Quality Improvement Methods for Altering Opioid Prescribing Behavior in Hand Surgery. *The Journal Of Orthopaedic Sports Medicine*; 2020; Feb 24.
15. NM, Hirschhorn R, et al. (2019) The Oregon Health Authority's Opioid Prescribing: A Systematic Review. *JAMA Surg*. 2019;153(10):948-954.
16. Janani, M. et al. Analysis and selection post-coronary artery bypass graft surgery: a review of the literature. *The Clin Risk Manag*. 2019;15:377-381.

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