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Alosa Health
Balanced information for better care

Managing perioperative pain

A focus on vascular surgery

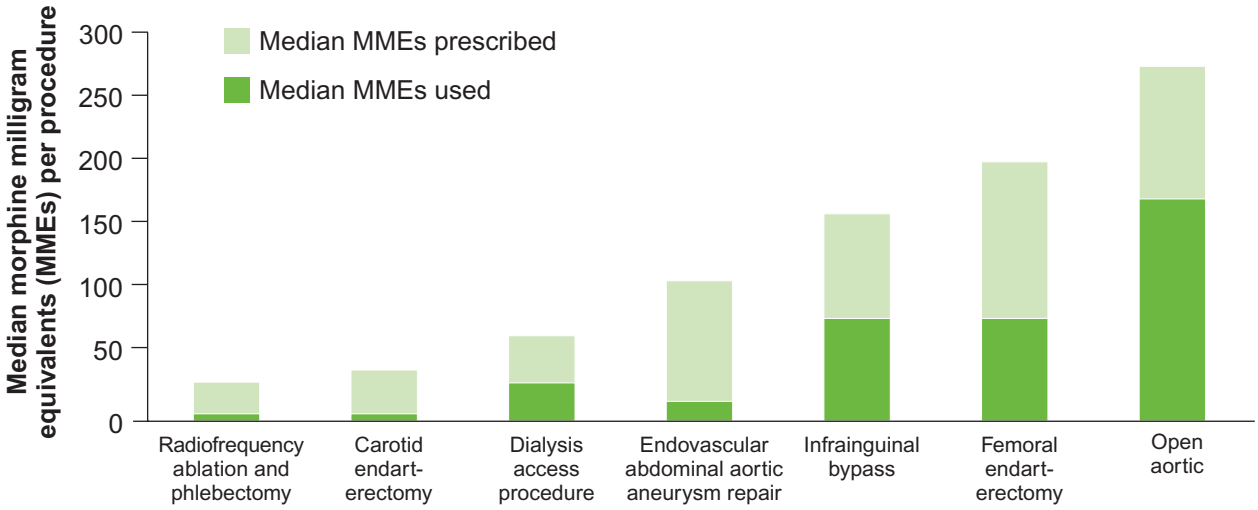
Reducing reliance on opioids for treating surgical pain

Opioids remain a frequent component of post-operative pain management plans.

26 million inpatient surgeries + **23 million** ambulatory surgeries = **Millions of opioid prescriptions annually**

Patients often do not need all of the opioids they are prescribed.

FIGURE 1. More than three in every four patients undergoing vascular surgery procedures filled an opioid prescription, yet the bulk of these prescriptions went unused.[1]



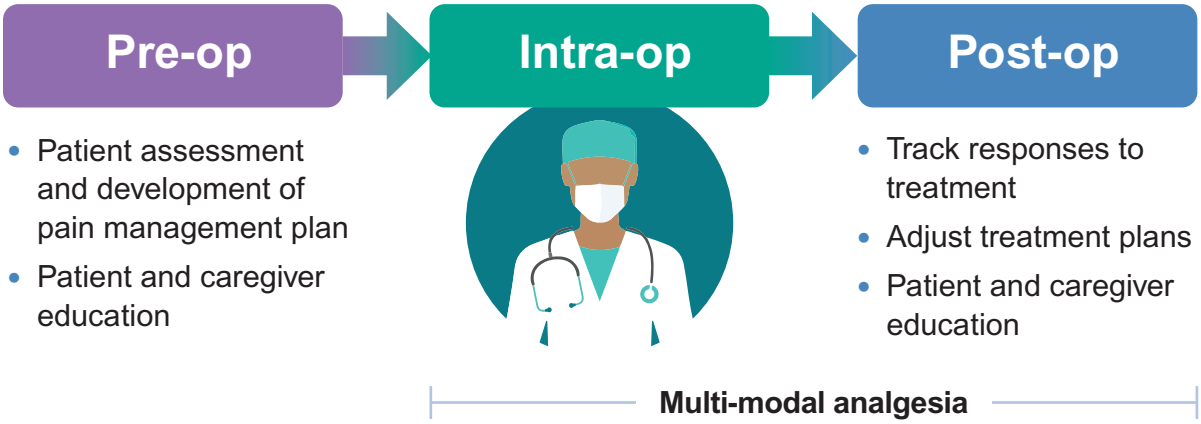
Exposure to opioids after surgery increases the risk of unsafe long-term use.

- Among opioid-naïve patients, new persistent opioid use occurs after 0.7% of surgeries (seven in 1000 surgeries),[2] compared to about 0.1% of patients who don't undergo surgery.[3]
- While opioid overdose immediately following surgery is rare, the risk increases with higher doses.[4]

Opioid prescribing can be reduced while still achieving good pain control and patient satisfaction.

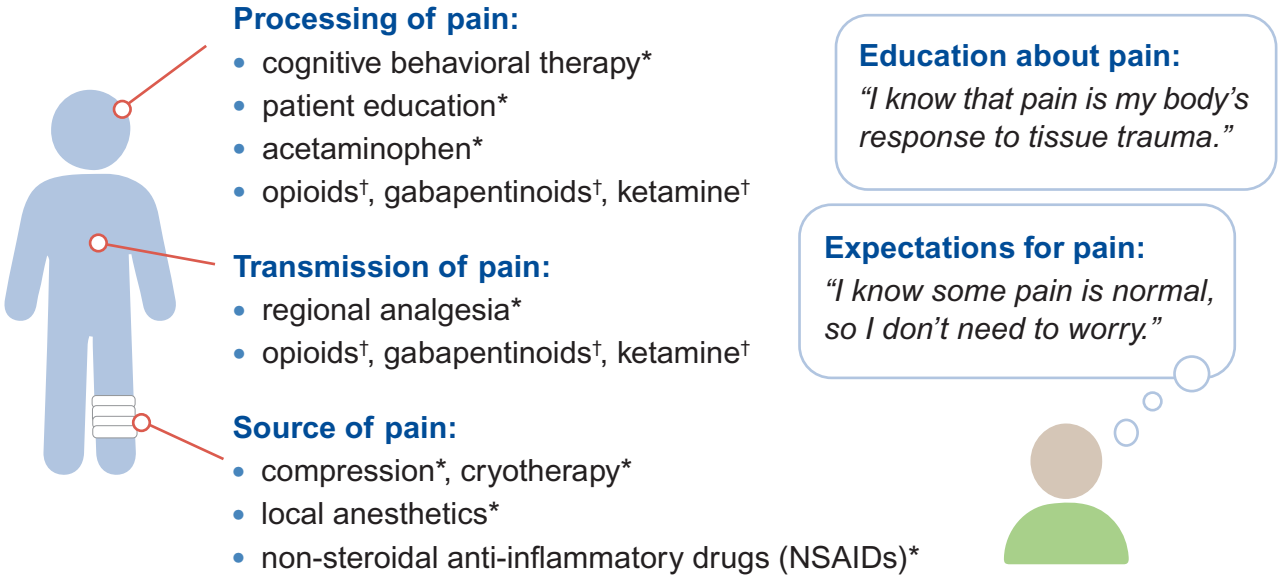
Managing perioperative pain

FIGURE 2. Effective pain management strategies require a plan across the care pathway.



Multi-modal analgesia encompasses a variety of approaches that address pain in different ways.

FIGURE 3. A patient-centered approach to multi-modal analgesia sets expectations about the perioperative course and involves several treatment modalities.[5]



The goal is not simply to eliminate opioids.
The goal is to manage pain with safe, effective options.

*Routine and should be available to all patients unless contraindicated. †Not routine and given only as indicated.

Evidence-based options for analgesia

TABLE 1. Select perioperative pain management based on patient factors and the procedure.

Mode of analgesia	Benefits	Side effects/ cautions*
Local anesthesia	Reduces use of pain medications and length of stay[6]	Bruising, bleeding, or soreness at injection site
Epidural analgesia	• Better pain control than parenteral opioids[7,8] • Earlier extubation, shorter ICU stay, and reduced rates of myocardial infarction[8]	Hypotension, urinary retention, itching[9]
Nerve block	• Better pain control than opioids for 3 days post-op • Transversus abdominis plane (TAP) superior to local injections for abdominal surgeries[10]	Soreness or bleeding at injection site
Acetaminophen	• First-line; can provide around-the-clock pain control when scheduled • Oral and IV acetaminophen reduce opioid needs[11,12]	Use with caution in patients with advanced cirrhosis[13]
NSAIDs	Reduces opioid use[12]	Use with caution in patients with kidney or gastric disease
Gabapentinoids (e.g., pregabalin, gabapentin)	• Decreases opioid use[14] • Continue in patients taking pre-op • Possibly helpful if pain has a neuropathic component	Dizziness[14]

*Weigh a mode of analgesia's side effects against other options being considered.

Combining NSAIDs and acetaminophen provides better analgesia than either alone.[15]

Track post-operative pain and adjust the plan based on patient response—start by considering new modes of analgesia.

Setting patient expectations

Patients and families may have unrealistic expectations of the impact of the surgery and recovery time. Discussions in the pre-operative period can help patients plan for the post-operative recovery, where ongoing education and expectation setting is also critical.

Tips for discussing expectations

Address common questions from surgical patients.

A study of patients after aortic aneurysm repair found patients most wanted to know:[16]

- *What is the recovery time for the procedure?*
- *What can I expect for post-operative pain and energy levels?*
- *How long will it take until I walk normally?*
- *When will I get my appetite back?*
- *What will the incisions look like and where will they be?*
- *Will there be other complications (difficulty urinating, constipation, or discomfort)?*
- *What should caregivers expect for length of hospital stay and discharge planning?*

Individualize the message to the patient.[17]

- Surgeries have different pain expectations.
- Patients have different pain tolerance and expectations. Pre-operative expectations of higher pain have been linked to moderate to severe post-operative pain.[18]
- The goal is not to be pain free, but to have pain adequately controlled.

Talk about the impact of pain management strategies that will be used.

- Regional anesthesia can help alleviate post-operative pain.[19]
- Discuss the transition plan for pain management. *"Most people need prescription pain medication for at least the first few days after this operation. When your pain is under control, start to cut back on opioids and transition to acetaminophen and ibuprofen."*[17]
- Opioid minimizing pain management plans do not impact patient satisfaction or pain scores.[20] Reassure the patient that pain will be addressed even if opioids are not prescribed.

In post-operative visits, ask patients about their pain medication use and how pre-operative expectations aligned with their post-operative course.

Talking to patients about expectations allows reframing of the pre-operative conversation to respond to specific procedures or pain management strategies.

Planning for improved patient care

Proactive planning helps manage challenges in certain patient populations that can occur after a procedure.

1 Prepare patients on chronic opioids for the transition home.

Patients with chronic pain on long-term opioids often sign agreements with clinicians for pain treatment. Collaborate with these usual prescribers before surgery to facilitate access to pain medicine after discharge if opioids are needed.

2 Consult with pain management or addiction specialists in complex patients.

- Patients with chronic pain and opioid or other substance use disorders require individualized plans for pain management, especially if opioids are needed.
- Addiction specialists can help prepare a discharge plan that can prevent return to use in patients who require opioids to manage pain.

3 Equip the team and patient with a plan.

Communication of the pain management plan between the inpatient team, outpatient nurses, and the patient and family facilitates a cohesive response to pain and any post-operative complications.

Strategies to reduce risk if opioids are needed:

1. **Optimize and continue non-opioid options for analgesia.**
2. **Provide patients with a plan to taper and discontinue opioids.**
3. **Discuss safe storage of opioids with patients.**
4. **Provide information about opioid disposal:**
   - DEA Take Back days
   - Drop-off bins at police stations or pharmacies
   - Use of medication disposal bags
5. **Prescribe or recommend naloxone for those at high risk for overdose—** high daily dose; opioid-benzodiazepine combinations; opioid, heroin, or other substance use disorders; other medical comorbidities potentially predisposing to overdose (morbid obesity, obstructive sleep apnea).

Key points

- Use a multi-modal pain management strategy to reduce the need for opioids.
- Develop a plan to address pain based on evidence-based strategies and patient experiences.
- Consult with pain or addiction specialists for complex patients.
- Communicate the pain management plan to the patient, family, and members of the care team along the care pathway.
- If opioids are needed, counsel patients on harm reduction, including safe storage, disposal, and naloxone.

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OPEN offers evidence-based best practices and the latest research on numerous aspects of opioid prescribing and pain management.

Scan to access OPEN's resources, or visit michigan-open.org.

Healthcare Professional Resources

Patient Education Resources

References:

(1) Colton IB, et al. *Vasc Med*. 2019;24(1):63-69. **(2)** Jivraj NK, et al. *Anesthesiology*. 2020;132(6):1528-1539. **(3)** Sun EC, et al. *JAMA Intern Med*. 2016;176(9):1286. **(4)** Ladha KS, et al. *JAMA*. 2018;320(5):502. **(5)** Mariano ER, Schatman ME. *J Pain Res*. 2019;Volume 12:3461-3466. **(6)** Mixter Iii CG, Hackett TR. *Surgical Endoscop*. 1997;11(4):351-353. **(7)** Block BM, et al. *JAMA*. 2003;290(18):2455. **(8)** Guay J, Kopp S. *Cochrane Database Syst Rev*. 2016;2016(1):Cd005059. **(9)** Popping DM, et al. *Ann Surg*. 2014;259(6):1056-1067. **(10)** Yu N, et al. *BMC Anesthesiol*. 2014;14(1):1-9. **(11)** Aryaie AH, et al. *Surg Endosc*. 2018;32(8):3432-3438. **(12)** Mcdaid C, et al. *Health Technol Assess*. 2010;14(17). **(13)** Hayward KL, et al. *Br J Clin Pharmacol*. 2016;81(2):210-222. **(14)** Mishriky BM, et al. *Br J Anaesth*. 2015;114(1):10-31. **(15)** Ong CKS, et al. *Anesth Analg*. 2010;110(4):1170-1179. **(16)** Dubois L, et al. *J Vasc Surg*. 2014;59(6):1528-1534. **(17)** LaVanture DI. *Orthopedics*. 2019;42(1):9-10. **(18)** Bayman EO, et al. *Pain Med*. 2019;20(3):543-554. **(19)** Dayan AC, et al. Inaccuracies of patients' postoperative pain predictions: setting reasonable expectations. Presented at: Anesthesiology 2017; October 21-25, 2017; Boston, MA. Abstract A1164. **(20)** Vu JV, et al. *N Engl J Med*. 2019;381(7):680-682.

About this publication

These are general recommendations only; specific clinical decisions should be made by the treating clinician based on an individual patient's clinical condition. More detailed information on this topic is provided in a longer evidence document at AlosaHealth.org.

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Aug 2022