



POST-OP PAIN MANAGEMENT BEGINS BEFORE SURGERY

SET APPROPRIATE EXPECTATIONS for post-op pain and create a pain management plan with patients prior to surgery date to encourage conservative use of opioids and enhance patient satisfaction.

- Simple conversations to educate your patient about pain after surgery and set realistic expectations for the healing process may lead to less pain, less depression, an increase in appropriate activity, and lower healthcare utilization.
- Help your patient set attainable post-op goals based on daily functioning and not just pain severity.

SCREEN PATIENTS to help identify those with or at risk for opioid use disorder (OUD), depression, and anxiety to help guide pre- and post-op strategies, including multi-modal pain management.

- It is important to recognize and address emotional and mental factors that heighten pain perception and are associated with higher post-op pain intensity and potential development of chronic post-op pain.
- Use caring conversation nuggets pre-op ...“too much worry and fear can make your pain feel worse”...to help reduce the negative influence of maladaptive coping strategies such as catastrophizing on your patient’s pain and recovery.

USE MULTI-MODAL PAIN MANAGEMENT, including non-drug strategies, to minimize opioid use and help patients reach treatment goals with fewer medications.

- Randomized trials show multi-modal analgesia is associated with better pain control, reduction in opioid use, and fewer adverse effects.
- Run prescription drug monitoring reports (i.e., SCRIPTS Reports) to understand current and past opioid, benzodiazepine, and other controlled substance use when planning for multi-modal pain care, follow-up monitoring, and tapering protocols.
- Educate patients about non-drug options and non-opioid medications to reduce post-op doses and duration of opioids taken after discharge.
- Remind patients that severe pain, not pain itself, is the indication to use an opioid.

COORDINATE A POST-OP PAIN MANAGEMENT PLAN with your patient and their primary care provider to continue patient progress and safeguard against persistent opioid use.

- Include instructions for appropriate tapering of opioids prescribed for post-op pain in all plans that include an opioid.
- Pre-op and follow-up care coordination with the primary care provider is especially important for patients with high levels of opioid use or escalating opioid use pre-surgery that may persist post-op.
- Share your post-op pain expectations with your patient and their primary care provider.

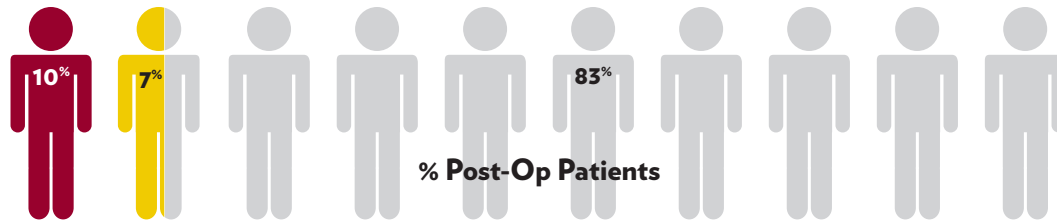
QUICK tip SC

Calculate tablet count needed for a patient’s opioid discharge prescription based on use the last 24 hours before discharge; no discharge opioid prescription is needed if no opioids were required.

PRE-OP SCREENING TO HELP GUIDE POST-OP PAIN MANAGEMENT

Opioid Use Patterns in South Carolina Medicaid Patients Undergoing Selected Surgeries¹⁻³

Associations between Pre-Op and Post-Op Opioid Use



CHRONIC OPIOID USE POST-OP – 10%

- Similar opioid use pre-op and post-op
 - Opioid use remained consistent at low, moderate, or high level
- Largest percentage of patients with surgeries for long debilitating pain (i.e., lumbar spine and TKA)
- Middle age

Patients may benefit from transitional pain services

ESCALATING OPIOID USE POST-OP⁴ – 7%

- 66% had escalating opioid use pre-op
- 22% had no opioids pre-op
- 3 out of 4 patients had higher opioid use month 9 post-discharge compared to pre-op use
- Larger percentage of lumbar spine and TKA patients
- Middle age

MOSTLY OR FULLY TAPERED OFF OPIOIDS MONTH 9 POST-DISCHARGE – 83%

- 54% had no opioids pre-op
- 42% had low to moderate opioid use (< 3 months) pre-op⁵
- 3 out of 4 had one or more opioid days during 30-days post-discharge
- 4 out of 5 returned to no opioid use within 2 – 3 months post-discharge

1. South Carolina Medicaid enrollees receiving one of six index surgeries performed between 2014 and 2017 (colon resection, lumbar spine, and TKA in patients 18 years and older; cholecystectomy in patients 13 years and older; appendectomy and tonsillectomy in patients ages 13 – 17 years). **2.** Opioid use measured in average morphine milligram equivalents (MME) per day. **3.** Opioid use is inferred from dispensed opioid prescriptions. **4.** 53% did not continue to further escalate opioid use at 5 – 6 months post-discharge. **5.** Less than 4% had > 3 months opioid use pre-op.

KEY: Middle age 33 – 64 years; Pre-op 6 months prior to surgery; Post-op 1 – 9 months post-discharge; TKA Total knee arthroplasty

Pre-op opioid use, chronic pain, substance use disorders, and psychological comorbidities influence a patient’s pain management plan (med choices, follow-up, monitoring) as these factors affect coping strategies, the intensity of post-op pain, and persistent post-op opioid use. Pre- AND post-op, **SCRIPTS provides a quick check** for patterns of chronic or escalating opioid use and the use of benzodiazepines. **Be alert to mental health concerns** and **coordinate care** with primary care providers and specialists as needed.

SELECTED PRE-OP SCREENING TOOLS

TOOL	DESCRIPTION	NUMBER OF QUESTIONS	TIME TO COMPLETION
Substance Use Screenings			
SC Prescription Drug Monitoring Program (PDMP) <i>See SCRIPTS Quick Tips & Tricks</i>	SCRIPTS (SC PDMP) generates patient-specific reports that identify current use and history of controlled substances	N/A	1-5 minutes
Opioid Risk Tool®(ORT)	Brief patient self-assessment validated in primary care to help predict the relative risk of opioid misuse and abuse	10	≤ 1 minute
Single-Item Screens (Polysubstance)	Single-question self-assessments to detect maladaptive alcohol and drug use	1 (alcohol)¹ 1 (drug)²	< 1 minute
Psychological Screenings			
PHQ-2 (Depression)	Initial screen validated for use in primary care (first 2 questions of PHQ-9) ³	2	< 1 minute
GAD-2 (Anxiety)	Initial screen (first 2 questions of GAD-7) ³	2	< 1 minute

1. How many times in the past year have you had 5 (male)/ 4 (female) or more drinks in a day? (> 0 positive) **2.** How many times in the past year have you used an illegal drug or prescription medication for non-medical reasons (for example, because of the experience or feeling it caused)? (> 0 positive) **3.** A score ≥ 3 warrants further evaluation with PHQ-9 (depression) or GAD-7 (anxiety).

KEY: GAD-2 Generalized Anxiety Disorder 2-item scale; GAD-7 Generalized Anxiety Disorder 7-item scale; PHQ-2 Patient Health Questionnaire 2-item depression scale; PHQ-9 Patient Health Questionnaire 9-item depression scale

NON-DRUG STRATEGIES FOR MANAGING SURGICAL PAIN

Non-drug strategies are often used in combination and are the foundation of multi-modal post-op pain management.

Ensuring a good night's **SLEEP** is a key part of a patient's pain management plan and recovery. Studies have demonstrated that pain and sleep interplay with each other; pain can reduce sleep quality and poor sleep may increase pain sensitivity.

EXERCISE, a fundamental non-drug strategy, comes in many forms ranging from light exercise such as stretching and walking that can be self-initiated according to the surgeon's protocol to more structured, supervised interventions for safe rehabilitation post-surgery.

SELECT NON-DRUG STRATEGIES FOR MANAGING PRE- AND POST-OP PAIN							
	SELECT NON-DRUG STRATEGIES	PRE-OP	POST-OP	PAYER COVERAGE ¹	SELF-DIRECTED CARE	RESOURCES FOR SELF-DIRECTED CARE	COMMENTS (SURGERY TYPE INCLUDED IN STUDY/REVIEW)
B E H A V I O R A L	Aromatherapy	-	✓ ²	-	✓	https://bit.ly/3ALiWeq	Through olfactory system or absorption through skin Lavender is the most commonly studied essential oil associated with decreased pain (cesareans, tonsillectomy, total knee arthroplasty [TKA], breast biopsy) Eucalyptus may reduce pain and blood pressure (TKA)
	Cognitive Behavioral Therapy (CBT)	✓ ³	✓ ³	BCBS	-		May reduce risk of long-term pain (back and cardiac) Find CBT near you at: https://www.psychologytoday.com/us/therapists/cognitive-behavioral-cbt
	Distraction Techniques	✓ ^{4,5}	✓ ^{4,5}	-	✓		Common techniques include counting, deep breathing, bubbles, drawing/coloring, listening to music, reading a book, crafts, virtual reality
	Guided Imagery	✓ ³	✓ ³	-	✓	https://bit.ly/3ROIz21	May reduce pre- and post-op anxiety, pain, and medication use; May increase patient satisfaction (elective colorectal surgical procedures) May reduce post-op pain (TKA)
	Meditation/Mindfulness	✓ ⁴	✓ ⁴	-	✓	https://k-p.li/3q4D7hl	May improve post-op physical function (TKA, total joint arthroplasty [TJA] of hip)
	Mindfulness Based Stress Reduction (MBSR)	✓ ⁴	-	-	✓	https://bit.ly/3RvBIMC	Pre-op program may benefit patients with higher psychosocial distress (TJA) Typically delivered as an 8-week structured program
	Music Therapy	✓ ³	✓ ³	-	✓	https://bit.ly/3QkJ9oY	May reduce post-op pain, anxiety, and medication use; May increase patient satisfaction (systematic reviews included > 14 surgery types)
P H Y S I C A L ⁸	Acupuncture	-	✓ ²	BCBS MCaid	-		May decrease post-op pain and medication use (systematic reviews included > 12 surgery types)
	Chiropractic	-	-	BCBS ⁶	-		Licensed professional that uses multiple non-drug strategies
	Cold Packs	-	✓ ³	-	✓	https://bit.ly/3egkLav	May reduce post-op pain (TJA, shoulder arthroscopy, TKA) May reduce pain, improve sleep, and perceived need for pain medication (shoulder arthroscopy)
	Heat Packs	-	-	-	✓		Heat should not be applied to incision site
	Massage	-	✓ ³	-	-		May reduce post-op pain and anxiety (systematic reviews included > 11 surgery types) Improvement in post-op pain may be seen with as little as one massage therapy session
	Occupational Therapy	-	✓	BCBS MCaid	-		Licensed professional that uses multiple non-drug strategies per surgeon's protocol
	Physical Therapy	-	✓	BCBS MCaid	-		Licensed professional that uses multiple non-drug strategies per surgeon's protocol
	Spinal Manipulation	-	-	BCBS ⁶ MCaid ⁷	-		
Transcutaneous Electrical Nerve Stimulation (TENS)	-	✓ ³	-	-		May reduce post-op pain and medication use; May improve post-op function (TKA) Do not place on contraindicated sites (e.g., pregnancy, cancers, implanted electrical device)	

1. May differ based on plan coverage. 2. Clinical benefit inconsistent. 3. Clinical benefit favorable. 4. Clinical benefit potentially favorable. 5. Usefulness based on pediatric studies. 6. Manual Therapy covered for a physical therapist or chiropractor. 7. Manual Therapy covered for a physical therapist. 8. Any physical strategy may be inappropriate or possibly contraindicated in a given patient.

KEY: ✓ Utility; - Identified in ≤ 1 study and no guideline recommendation or Not Covered; **BCBS** BlueCross BlueShield; **MCaid** Medicaid

NON-OPIOID AND OPIOID MEDS IN MULTI-MODAL (MM) SURGICAL PAIN MANAGEMENT

Optimize non-drug options, scheduled around-the-clock non-opioid meds (e.g., NSAID + APAP), **and appropriate anesthesiology techniques** (e.g., regional anesthesia) to minimize opioid use, reduce adverse effects, and improve pain control. When an opioid is needed, guidelines agree to **provide patient education about risks of opioid therapy** prior to prescribing the lowest effective dose of a short-acting opioid for the shortest necessary duration.¹

NSAIDs and APAP² in combination provide better pain control than either option alone. Taking both meds at the same time may improve adherence to scheduled dosing. Example: Ibuprofen 600 mg + APAP 1000 mg TID.

Risks of CV and GI adverse effects from NSAIDs increase with higher doses and longer duration. Risks may exceed benefits for some patients.

NSAID	Max Daily Dose	Rx or OTC
Ibuprofen ^{3,4}	3200 mg	Rx/OTC
Naproxen sodium ^{3,4,5}	1100 mg	Rx/OTC
Celecoxib ⁶	400 mg	Rx

Effectiveness data on post-op **gabapentin** and **pregabalin** for MM pain control is limited and inconclusive. Use is **not without risk** – e.g., sedation, respiratory depression, delirium in the elderly.

Tramadol may be less effective than other opioids. It is **NOT necessarily** the “safer” opioid option and may increase risk of long-term opioid use.

- 1.** SC Code of Laws 44-53-360 limits initial opioid prescription to ≤ 7 days, with an exception for major surgery. **2.** **APAP 4000 mg maximum daily dose; consider 3000 mg maximum, especially if elevated liver function tests, known liver impairment, or older adult. Use 2000 mg maximum in patients with alcohol use disorder or taking warfarin.** **3.** Non-selective NSAID. **4.** OTC maximum daily dose is lower. **5.** OTC naproxen sodium 1100 mg equivalent to Rx naproxen 1000 mg. **6.** COX-2 selective NSAID.

POST-OP OPIOID DISCHARGE PRESCRIBING AND TAPERING GUIDANCE

Surgery Category	Discharge Opioid Prescribing ¹		Acute Opioid Tapers ^{3,4} <i>Total opioid days include days of taper</i>
	Number of Tablets	Days Supply	
Type I – Expected rapid recovery <i>Patient resumes most activities 2 weeks after surgery</i>	0 - 12 ²	≤ 3	< 7 days → consider 50% reduction every 2 days
Type II – Expected medium-term recovery <i>Patient resumes most activities 4 weeks after surgery</i>	0 - 42	≤ 7	7 - 14 days → ≈ 20 - 25% reduction every 2 days
Type III – Expected longer-term recovery <i>Patient resumes most activities 4 + weeks after surgery</i>	0 - 60	≤ 14	> 14 days → ≈ 10 - 20% reduction every 2 - 4 days
			<i>Percent reduction based on original daily dose (e.g., if initial reduction is 1 tablet, decrease by 1 tablet each time)</i>

- 1.** Discharge opioid prescribing guidances: Washington State Agency Medical Director’s Group 2018, Orthopaedic Trauma Pain Task Force 2019, Michigan OPEN Opioid Prescribing Recommendations, Canadian Consensus Statement on Pain Medications at Discharge 2020. **2.** Excludes 28-tablet recommendation from Orthopaedic Trauma Pain Task Force 2019. **3.** Acute tapering guidances: American Pain Society Guidelines on Post-Op Pain Management 2016, CDC Clinical Practice Guideline for Prescribing Opioids 2022, HSS Patient Guide by Dave 2018. **4.** The last dose of taper should be the nighttime dose.

KEY: **APAP** Acetaminophen; **CDC** Centers for Disease Control and Prevention; **CV** Cardiovascular; **GI** Gastrointestinal; **HSS** Hospital for Special Surgery; **MME** Morphine Milligram Equivalents; **NSAID(s)** Non-steroidal anti-inflammatory drug(s); **OPEN** Opioid Prescribing Engagement Network; **OTC** Over-the-counter; **Rx** Prescription; **TID** Three times a day

Co-prescribe naloxone for rescue if not on hand for any higher risk patient (e.g., ≥ 50 MME/day, concomitant benzodiazepine and opioid use, on medication for opioid use disorder).
SC Code of Laws 44-53-361

SPECIAL CONSIDERATIONS FOR PATIENTS ON CHRONIC OPIOIDS FOR PAIN

Patients on chronic opioids may have **increased pain sensitivity** and **require higher doses** of short acting opioids to treat acute post-op pain. They need a tapering plan for any additional opioids prescribed post-op just like EVERY patient receiving acute post-op opioids.

Should chronic opioids be tapered pre-op? No definitive evidence exists to encourage or discourage the pre-op tapering of chronic opioids to a reduced dose to improve patient outcomes. In studies that suggest benefit, it is unclear if it is the taper itself or characteristics of the patient willing to taper (e.g., positive attitude, less severe pain) that positively affects pain and recovery. Patients do need to be fully engaged early-on as any pre-op taper should be gradual and “reluctant tapering” may increase the risk of overdose.

“Slower” Tapers from Selected Guidelines for Patients on Opioid Therapy for Chronic Pain^{1,2}

Percent reductions below are based on the original daily dose before starting the taper, NOT the previous dose (e.g., if the initial decrease is 15 mg, you decrease by 15 mg every time if using the same percent reduction)

GUIDELINE	SLOWER TAPER RECOMMENDATIONS	
VA/ DoD Clinical Practice Guidelines 2022	5 - 20% reduction every 4 weeks	<i>Pauses in taper as needed</i>
Canadian Guideline 2017	5 - 10% every 2 to 4 weeks	<i>Frequent follow-up</i>

1. Co-prescribe naloxone due to increased overdose risk if patient resumes a previous dose (prescription or illicit use); tolerance lost to previous dose within 1 – 2 weeks on reduced dose or abstinence.
2. In general, the longer the duration of opioid therapy, the slower the taper.

SPECIAL CONSIDERATIONS FOR PATIENTS ON MEDICATION FOR OPIOID USE DISORDER (MOUD)

More recent guidance and expert opinion recommend **continuation of** MOUD opioid agonist medications (i.e., **buprenorphine and methadone**) throughout the perioperative period, as treatment disruption can increase relapse risk. Any patient on naltrexone for OUD requires close monitoring beginning with discontinuation until restarting therapy 7-10 days after last opioid. Naltrexone, the MOUD opioid antagonist, offers no analgesic benefit and is also used to treat alcohol use disorder (AUD).

Coordinate care with the patient’s MOUD provider pre-op through post-op; confirm pre-op dose and adherence plus communicate discharge pain management and tapering plan.

Short-term use of short-acting **opioids may be necessary** for appropriate pain control; there is little evidence that opioid treatment for surgical pain in patients on MOUD increases their risk for relapse.

Patients on opioid agonists may require higher doses of additional opioids to achieve the same analgesic effect as an opioid naïve patient due to opioid tolerance from their established home MOUD dose.

Patients on paused naltrexone therapy for surgery **may experience increased sensitivity to opioids**; close monitoring required due to risk of respiratory depression.

PERIOPERATIVE BUPRENORPHINE

Pre-op: confirm outpatient dose, coordinate approach with prescribing provider and anesthesiologist (hospitals can vary in preferred approach), and discuss with patients their drug and non-drug pain management preferences.

Dosing considerations gathered from approaches used at multiple institutions include:

Anticipated mild pain: Continue home daily dose pre-op, including morning of planned surgery. Utilize routine mild post-op pain care. For additional pain control, consider splitting home dose and give every 8 hours.

Anticipated moderate to severe pain with addition of full opioid agonist: Continue home daily dose pre-op, including morning of planned surgery **OR** consider: reducing home daily dose to 16 mg (if applicable) day prior to surgery, reducing any dose > 12 mg to 8-12 mg day of surgery and early post-op, and dividing dose. Generally, home buprenorphine dose should be reinstated at discharge.

PERIOPERATIVE METHADONE

Pre-op, confirm with opioid treatment program (OTP) clinic: outpatient dose, last day of dose administration, and if the patient was dispensed any take home doses.

Continue daily dose pre-op including morning of planned surgery. Consider dividing daily dose and administer every 8 hours early post-op. If divide dose, reinstitute single daily dose at least by day of discharge.

PERIOPERATIVE NALTREXONE

Pre-op, contact prescriber to discuss injection interval. Schedule surgery to coincide with low naltrexone levels (typically 4 weeks after injection). For any patient on oral naltrexone, discontinue tablets 72 hours prior to surgery.

Just like any other patient, patients on chronic opioids for pain and patients with OUD need post-op pain treatment.

