Compass SHARP

Guidelines on Limiting Opioid Use in the Perioperative Setting

The majority of patients who develop opioid use disorder (OUD) report that their first exposure to an opioid involved a pain medication that was prescribed to them or diverted from a family member or friend.[1] General surgeons are responsible for approximately 5% of the opioid prescriptions dispensed in the United States, and the vast majority of hospitalized surgical patients receive opioid analgesia.[2-4] While postoperative pain control is essential, a significant and growing body of research has questioned the extent to which opioids are used in surgical practice and is elucidating the harms that excessive and indiscriminate prescribing poses to patients and communities.

While opioids are an indispensable tool for the management of acute, severe pain, the human and economic costs of their immediate and long-term adverse effects are enormous. Persistent opioid use after surgery is a widespread, under-recognized complication. More than 80% of patients are prescribed an opioid after low-risk operations, and the vast majority of surgical inpatients receive opioid analgesia, often by multiple routes of administration.[3] Thus the perioperative period is a time of opioid exposure for virtually every surgical patient.[5] Of the 50 million patients who undergo surgery every year, more than two million may shift to persistent opioid use.[5-7] An estimated 5.9% of patients who undergo minor procedures and 6.5% of those who undergo major surgeries become new persistent opioid users.[8] The fact that these rates depend less on the magnitude of the surgical procedure and more on patient factors suggests that careful screening for an elevated risk of developing OUD or chronic postsurgical pain (CPSP) may help protect vulnerable patients.[9] That said, opioids are highly addictive drugs, and virtually any patient who is exposed to them—particularly at higher doses and longer duration—is at risk for dependence and addiction.

In addition to the risk of long-term opioid use, Opioid-Related Adverse Drug Events (ORADEs) affect an estimated 10-14% of hospitalized surgical patients and are associated with worse outcomes, including increased inpatient mortality, prolonged length of stay, a greater likelihood of discharge to another care facility, increased health care costs and higher rates of 30-day readmission.[2] Many ORADEs may directly or indirectly impair surgical recovery, including nausea and vomiting, ileus, constipation, respiratory depression, sedation, cognitive impairment, and cardiovascular compromise.[2,10-12] Less understood but equally concerning is the evidence that even short-term opioid exposure may contribute to opioid-induced hyperalgesia (OIH), chronic postsurgical pain (CPSP), immunosuppression, and, possibly, cancer growth and metastasis.[13-23]

The extent to which surgeons overprescribe opioids has only recently been investigated. Between 67% and 92% of patients who have undergone a variety of general, orthopedic, thoracic, and obstetric-gynecologic surgeries report having unused prescription opioids after their procedures.[24-26] In roughly 75% of cases, opioids were discontinued or never used because the patient's pain was controlled without them. Only 28% of opioid pills prescribed on discharge to general surgical patients are actually taken.[27] Furthermore, fewer than 10% of surgical patients safely dispose of their unused opioids, a factor that contributes significantly to the vast reservoir of pills that are available for diversion.[27] One review found that more than 45% of surgical inpatients from a range of subspecialties were discharged with a prescription for an opioid despite not requiring any opioid analgesia during the final 24 hours of their hospital stay.[28]

In many cases, surgeons overprescribe opioids to ensure that their patients receive adequate and uninterrupted analgesia. Until recently, no guidelines for prescribing opioids at discharge have been available, a deficit that has forced surgeons to rely on the customary prescribing practices they learned in residency. Researchers are now beginning to formulate opioid prescribing guidelines based on what patients actually report needing after common surgical procedures.[29-31] Fortunately,

research finds no correlation between patient satisfaction or pain relief and the quantity or duration of opioid prescriptions they receive, suggesting that surgeons may use these newly developed prescribing guidelines to curtail their opioid prescribing without sacrificing analgesia or patient satisfaction.[32]

Surgeons are abundantly aware that poorly controlled pain negatively affects patients' quality of life, function, speed of recovery, risk of surgical complications, and the likelihood of developing CPSP.[33-35] Pain causes physiologic stress that may in itself be harmful, but despite the near-universal use of short courses of opioids perioperatively, as many as 80% of patients report moderate to extreme postoperative pain.[36-37] Put simply, increases in perioperative opioid use have not been accompanied by decreases in postoperative pain. Clearly, a new and different approach is warranted, both to improve patient experience and to address the alarming rates of OUD and overdose facing Iowa and the nation.

Close collaboration between surgeons and anesthesiologists and, when appropriate, pain medicine, addiction medicine, and behavioral health clinicians may support these efforts. Perioperative care teams best serve their patients and communities by working together to both manage pain and limit patient and community opioid exposure whenever possible. Across all specialties, a common-sense first step to addressing the opioid epidemic is to order and prescribe opioids more judiciously. Perioperative care teams have a vital role to play in ending the crisis by screening patients, prescribing opioids conservatively, and providing counsel on the risks of opioid analgesia.

NOTE: The following practice recommendations may not apply to patients who are dependent on opioids, such as those with active OUD, those on Medications for Opioid Use Disorder (MOUD), and those with chronic pain who are receiving chronic opioid therapy. Special considerations for the care of these patients are addressed below in the Harm Reduction and Treatment of Opioid Use Disorder sections.

Adverse Effects of Opioids	
Common Side Effects	**Serious Side Effects of Chronic Opioid Use**
• Nausea/vomiting • Constipation • Pruritus • Euphoria • Respiratory depression, particularly with the simultaneous use of alcohol, benzodiazepines, antihistamines, muscle relaxants or barbiturates • Lightheadedness • Dry mouth	• Cardiac abnormalities, including prolonged QTc and torsades de pointes • Sudden cardiac death with the concomitant use of benzodiazepines and methadone • Hormonal disruptions, including decreased testosterone • Decreased luteinizing hormone, follicle-stimulating hormone, and fertility • Musculoskeletal compromise, including an increased risk of osteoporosis • Immunosuppression • Inhibition of cellular immunity via delta and kappa receptors • Hyperalgesia (i.e., upregulation of receptors and increased tolerance)

	• Sleep disturbances (e.g., shortened deep sleep cycle) • Delayed or inhibited gastric emptying, increased sphincter tone, and blockade of peristalsis

SOURCE: Martin PR, Hubbard JR. Substance-related disorders. In: Ebert MH, Loosen PT, Nurcombe B: Current Diagnosis & Treatment in Psychiatry. New York: McGraw Hill; 2000:233-259.

Practice Recommendations to Reduce the Risks Associated with Perioperative Opioid Therapy

1. Opioids are inherently dangerous, highly addictive drugs with significant potential for misuse and addiction, numerous side effects, lethality in overdose, rapid development of tolerance, and debilitating withdrawal symptoms. Surgeons are encouraged to reserve opioids for the treatment of pain that has not responded to nonopioid therapy and for patients for whom nonopioid therapy is contraindicated or anticipated to be ineffective.

a. Opioids are among the three broad categories of medications with potential for misuse, dependence, and addiction, the other two being central nervous system (CNS) depressants and stimulants. Opioids act by attaching to opioid receptors on nerve cells in the brain, spinal cord, gastrointestinal (GI) tract, and other organs, triggering a spike in dopamine that not only reduces the perception of pain but can also manufacture a powerful sense of well-being and pleasure by affecting the brain's limbic reward system.
b. When used repeatedly, opioids induce tolerance, as exposure to opioids leads to loss of receptor activity and higher doses are required over time to produce the same effect.[38-39] This mechanism also contributes to the high risk of overdose following a period of abstinence.[40] Tolerance can be lost in times of abstinence, leading relapsed users to take a previously "safe" dose with disastrous results.[41]
c. The effects of opioids are mediated by specific subtype opioid receptors (mu, delta, and kappa) that are also activated by endogenous endorphins and enkephalins. The production of endogenous opioids is inhibited by the repeated administration of outside opioids, which accounts for the discomfort that ensues when the drugs are discontinued.
d. Opioid therapy is associated with a number of common, sometimes serious side effects, including sedation, respiratory depression, constipation, nausea, and vomiting.[42-43] These complications, which often necessitate additional medical care, can prevent patients from performing daily tasks and remaining active in the workforce.
e. OIH is a paradoxical phenomenon of increased sensitivity to noxious stimuli associated with long-term opioid use. Evidence suggests that even short-term exposures to opioids, particularly to potent agents like remifentanil, may produce OIH.[44-45]

f. Opioids can impair immune responses, promote angiogenesis, and impact NK and T-cell function. In vitro, animal, and some human studies suggest a possible association between perioperative opioid use and inferior oncologic outcomes. Research is ongoing to further understand this association.[46-48]

g. The risk-to-benefit ratio does not support the use of opioids if viable alternatives are available. Nonopioid analgesics, including acetaminophen (APAP) and nonsteroidal anti-inflammatory drugs (NSAIDs), may be equally or more effective than opioids for the management of pain associated with some conditions.[49-53]

2. When opioids are deemed a necessary part of analgesic therapy, surgeons are encouraged to use the lowest effective opioid dose for the shortest possible duration to manage pain.

a. When managing opioid-naïve patients, it is recommended that the use of perioperative opioids cease as soon as possible after surgery, as every additional day of opioid use may increase the likelihood of chronic opioid use.[54] In a study of 1,294,247 opioid-naïve patients who were prescribed an opioid for acute pain, the rate of long-term opioid use rose with every additional day of use (6% for those who took opioids for at least one day, 13.5% for those who took them for eight days or more and 29.9% for those prescribed opioids for 31 days or more).[54]

b. Higher doses of opioids are associated with a higher incidence of ORADEs, particularly overdose, in both inpatient and outpatient settings.[54-55]

c. Surgeons are advised to consider resetting default opioid doses on computerized provider order entry systems to the lowest available dose and designating the use of these agents for breakthrough pain only.

d. For patients on chronic opioid therapy (COT) prior to surgery, the goal of eliminating opioid use may be unrealistic and inappropriate. In this patient population, a return to baseline opioid use within seven to 14 days after surgery is a reasonable goal.

e. Clinicians are encouraged to frequently reassess their patient's need for opioids and adjust the dosage in accordance with healing, pain improvement, and functional improvement.

3. Surgeons are encouraged to use immediate-release opioid formulations and to avoid the initiation of long-acting or extended-release formulations for the treatment of perioperative pain.

a. Long-acting or extended-release opioids are indicated only for the treatment of chronic pain, OUD, or opioid withdrawal. They are not recommended for the treatment of acute or intermittent symptoms.[56]

b. Long-acting and extended-release agents are especially dangerous in opioid-naïve patients, even at recommended dosages, and are associated with an increased risk of overdose.[57]

c. Long-acting and extended-release opioids carry a long-term risk of dependence that is nearly 4.5 times higher than that seen with immediate-release formulations.[54]

d. For patients taking long-acting or extended-release formulations for the treatment of addiction or chronic pain, the discontinuation of these agents is discouraged; opioids are generally necessary to meet the baseline requirements of these patients in the perioperative period.

NOTE: Opioid products with a single ingredient (e.g., oxycodone) are favored over combination formulations (e.g., oxycodone/APAP), as patients are encouraged to take nonopioid analgesics (APAP, NSAID) consistently prior to resorting to an opioid. Use of monoproducts allows APAP or NSAID to be taken preferentially and used as a first-line agent with a lower risk of supratherapeutic dosing or

accidental poisoning. Combination products are indicated by asterisk (*) below.

Short-acting opioids include but are not limited to the following agents:[51]

- Hydrocodone – immediate release (IR) (e.g., Vicodin,* Lorcet,* Lortab,* Norco*)
- Hydromorphone – IR (e.g., Dilaudid)
- Morphine – IR
- Oxycodone – IR (e.g., Percocet,* Percodan,* Roxicodone)
- Oxymorphone – IR (e.g., Opana)
- Tramadol – IR (e.g., Ultracet,* Ultram)
- Tapentadol – IR (e.g., Nucynta)

It is recommended that long-acting and extended-release formulations not be newly initiated in the immediate postoperative period. Examples include but are not limited to the following agents:

- Hydrocodone – extended-release (e.g., Hysingla ER, Zohydro ER)
- Fentanyl – transdermal (e.g., Duragesic)
- Methadone (e.g., Dolophine)
- Morphine – sustained release (e.g., MS Contin, Avinza, Kadian)
- Oxycodone – sustained release (e.g., OxyContin)
- Oxymorphone – extended-release (e.g., Opana ER)
- Tramadol – extended-release (e.g., Ultram ER)
- Tapentadol – extended release (e.g., Nucynta ER)

4. Surgeons are encouraged to use the oral route of administration for opioids whenever possible. Intravenous (IV) opioids are best reserved for patients who cannot take medications by mouth, patients with suspected gastrointestinal malabsorption, and patients for whom immediate pain control or rapid dose titration is necessary.

a. IV administration is associated with an increased risk of side effects, adverse events, and medication errors.[58-60]
b. In general, rapid-onset medications have greater addiction potential. (Onset with IV administration is five to 10 minutes on average compared to 15-30 minutes with oral administration.)[61-62]
c. Furthermore, the duration of action is greater with oral administration than with IV administration, which may allow for more consistent pain relief and less frequent administration.

5. When initiating opioid therapy, surgeons are encouraged to use an opioid equivalency table or calculator (such as the free HEAL MME Calculator) to understand the relative potency of different medications; this is particularly important when switching to a new drug or changing the route of administration.

a. Most of the errors associated with preventable adverse drug events in hospitals occur at the ordering stage.[63]
b. Clinicians may be unaware of the relative potencies of different opioids and their morphine-equivalent dose; such oversights can lead to inadvertent overdose.
c. Clinicians are encouraged to use one of many available opioid equivalency tables or calculators—or

consult with a pharmacist—to better understand the relative potencies of opioids, inform starting dose calculations, guide conversions between opioids, and manage different routes of administration.

d. When changing from one opioid to another, clinicians are encouraged to reduce the dose of the new opioid by at least 25-50% of the calculated equianalgesic dose to account for interindividual variability in the response to opioids as well as the possibility of incomplete cross-tolerance.
e. Clinicians are advised to use extreme caution when performing conversions to and from methadone. A consultation with a hospital pharmacist or pain management specialist can help guide conversion decisions and calculations.

6. When prescribing opioids, surgeons are encouraged to order a bowel regimen to prevent opioid-induced constipation.

a. Constipation is a very common adverse effect of opioid therapy due to decreased peristalsis caused by the activation of mu-opioid receptors in the colon.[11]
b. Surgical patients are already prone to constipation due to their often-limited physical mobility; this risk is amplified by perioperative opioid therapy.
c. Administration of a bowel regimen is recommended for all surgical patients receiving opioid therapy unless diarrhea is present.
d. Stimulant laxatives (e.g., senna, bisacodyl) are suggested as part of the bowel regimen.[11]
e. Osmotic laxatives (e.g., polyethylene glycol, lactulose) have demonstrated efficacy for the treatment of general (not necessarily opioid-induced) constipation.[64]
f. Due to the limited and conflicting evidence regarding their use, monotherapy with stool softeners is not suggested for opioid-induced constipation.[64]
g. Newer agents for opioid-induced constipation, including naloxegol, methylnaltrexone, alvimopan, lubiprostone, and naldemedine, are efficacious but significantly more expensive and may be considered for use when conventional therapies have failed. Subcutaneous methylnaltrexone was shown to be more efficacious than lubiprostone, naloxegol, and oral methylnaltrexone for opioid-induced constipation.[65]
h. Surgical teams are encouraged to track bowel movements during hospitalization and, if opioids are continued, upon discharge direct the patient or caregiver to do so; the bowel regimen can be modified accordingly.

7. Surgeons are encouraged to avoid or limit the coadministration of opioids with benzodiazepines, gabapentinoids, barbiturates, and other CNS depressants.[66-67]

a. The use of any of the above agents concurrently with opioids increases the risk of ORADEs both in and out of the hospital setting.
b. Patients taking opioids and benzodiazepines concurrently have 10 times the risk of fatal overdose compared with patients taking opioids alone.[68]
c. Other medications with CNS-depressant properties may also increase the risk of overdose, including nonbenzodiazepine sedative-hypnotics, muscle relaxants, sedating antidepressants, antipsychotics, and antihistamines.[66,69-70]
d. These combinations are sometimes unavoidable, as the routine discontinuation of long-standing medications is not advised given the risks of withdrawal or the worsening of an underlying condition for which these medications are prescribed. In such cases, clinicians are encouraged to carefully

consider the necessity of each medication during hospitalization with input from the patient's outpatient clinicians.

e. It is advised that new co-prescriptions with CNS depressants be avoided in the perioperative period.

8. Surgeons are encouraged to monitor the patient's response to opioid therapy, assess for functional improvements, and recognize and manage adverse effects.

a. A large study of hospitalized postsurgical patients found a rate of ORADEs of 10.6%. Worse outcomes included increased inpatient mortality, a greater likelihood of discharge to another care facility, prolonged lengths of stay, high hospitalization costs, and an increased rate of 30-day readmission.[71]

b. Respiratory depression is the most dangerous ORADE. Surgical teams are encouraged to identify patients for increased risk of opioid-related respiratory depression before initiating opioid therapy and assess for this complication frequently.[72] (See below, practice recommendation 6, for more detail.)

c. Because sedation typically precedes respiratory depression, it is generally suggested that patients be evaluated after each opioid dose (10-20 minutes for IV administration and 30-60 minutes for oral administration based on the time-to-peak effect).

d. It is not yet established whether certain patients may benefit from more intensive respiratory monitoring, such as pulse oximetry or capnography.

e. It is recommended that pain severity and function be assessed daily (at minimum) during hospitalization.

f. An improvement in reported pain severity without an improvement in function after several days of opioid therapy may prompt clinicians to reevaluate the appropriateness of ongoing opioid therapy and reconsider the patient's diagnosis and underlying source of pain.

g. Surgeons are encouraged to consult anesthesia or pain services when managing patients with increasing opioid requirements for whom multimodal analgesic pharmacologic options have been fully implemented.

    i. Per the Joint Commission, "Access to pain specialists by consultation or referral reflects best practice in addressing patients with complex pain management needs."[72]

Opioid Stewardship in the Preoperative Period

1. Surgical teams are encouraged to work with patients, families, and caregivers to establish realistic goals and expectations about the course of recovery.

a. Patient education can improve health outcomes and the patient experience.[73-74]

b. Surgical teams are encouraged to provide patients, families and caregivers with educational resources about their surgical procedure and the anesthesia they will receive.

c. It is suggested that surgical care teams educate patients, families and caregivers on the normal physiology of postoperative healing and emphasize that a period of rest and limited work and social responsibilities may accelerate healing and recovery.

d. It is essential to discuss expectations with both patients and caregivers at the start of therapy to facilitate a clear understanding of how meaningful improvement will be measured postoperatively and how long opioid therapy may be required.

e. Clinicians may educate patients, families, and caregivers that improvement is best defined by recovery of function rather than scores on numerical pain scales and that improvement in pain without improvement in function is not the goal.
f. It is recommended that patients be advised that their surgical team aims to keep their pain at a manageable level, not to render them pain-free. Patients, families, and caregivers may be advised that mild pain may serve to guide a patient's level of activity. In addition, patients may be advised that overtreatment of pain may mask early indications of a surgical complication.
g. Reassure patients that acute pain is expected to diminish as the underlying surgical condition resolves and postoperative healing progresses.

2. Prior to surgery, it is important to discuss the role of opioids in postoperative analgesia. Surgical teams are encouraged to educate patients and caregivers about both the potential long-term risks and the immediate adverse effects of opioid therapy.

a. Surgical teams are encouraged to provide detailed information about the immediate adverse effects of opioids and their potential impact on surgical recovery while emphasizing the alternative pharmacologic and nonpharmacologic multimodal analgesic options available.
b. Patients are often unaware of the short- and long-term risks associated with opioid medications or that there may be equally effective alternatives available for postoperative analgesia.
c. Fewer than one in five Americans consider prescription pain medication to be a serious safety threat.[75]
d. It is important for all patients to be aware that they are at risk for opioid dependence and addiction. The National Safety Council estimates that more than half of U.S. patients have at least one risk factor for the development of OUD. A prior or family history of an SUD, current alcohol or tobacco use, chronic pain, and behavioral health disorders all increase this potential; however, an opioid-naïve patient with no risk factors can still develop an OUD.[76-77]
e. Surgical teams are encouraged to inform patients that they may request nonopioid multimodal analgesia in lieu of opioids, even for severe postoperative pain.

3. Surgeons are encouraged to counsel patients on the rehabilitative measures they may take to reduce postoperative pain and to accelerate recovery.[78-80]The concept of surgical prehabilitation is relatively new, however, there is a growing body of research that shows a reduction in surgical complications and faster recovery after surgery with surgical prehabilitation..[81, 207]

a. It is recommended that all patients be encouraged to stop smoking. Surgical patients may be additionally advised that smoking cessation may not only improve perioperative outcomes but also that smoking is associated with greater postoperative pain and opioid requirements.[78,82-84] The mechanism of the association between smoking and postoperative pain is not fully understood.[85]
    i. Nicotine and carbon monoxide are responsible for the immediate perioperative risks of smoking, which include cardiopulmonary complications, wound infection, impaired wound healing and bone fusion, and prolonged hospitalization.[86-87] Patients may be educated that even 24-48 hours of smoking cessation may reduce risk.[86]
    ii. Surgical teams are encouraged to prescribe their patients nicotine replacement therapy (NRT) to aid in smoking cessation prior to elective surgery. A Cochrane review found evidence that preoperative NRT and behavioral support did increase short-term smoking cessation and may reduce postoperative morbidity.[88]

iii. Evidence does not support postoperative benefits of nicotine replacement for surgical patients.[79]

b. Heavy alcohol use (at least five drinks [>60 g ethanol] per day) is associated with poor surgical outcomes and increased postoperative pain and opioid requirements, possibly via changes to N-methyl-D-aspartate (NMDA) and mu-opioid receptor densities in chronic alcohol users.[89-94]
   i. A study in colorectal patients who were heavy alcohol users (without cirrhosis or clinical evidence of alcohol use) found better outcomes in patients treated disulfiram for one month prior to surgery.[95] A Cochrane review of preoperative alcohol cessation prior to elective surgery also notes lower rates of complications.[96]
   ii. Surgical teams may consider referring patients who are heavy alcohol users to addiction medicine and/or behavioral health care for pharmacological strategies for relapse prophylaxis and management of alcohol withdrawal symptoms prior to elective procedures.[96]

c. Surgeons and anesthesiologists frequently encounter patients who are chronic users of dispensary cannabis. Mounting evidence indicates that cannabis is neither safe nor effective as an analgesic. In addition, anesthetic complications are frequent in chronic cannabis users.

d. Limited evidence suggests that preoperative improvements in diet and light exercise may reduce postoperative pain and analgesic requirements.[97-101] i. A study in patients undergoing colorectal surgery found that patients who were advised by a dietician and guided in adopting the Mediterranean diet encouraged to walk >5,000 steps per day and to do core strength exercises, with reminders from a web-based platform, had significantly lower pain scores and half the opioid consumption of the control group.[100]

4. Surgeons are encouraged to avoid prescribing opioids to opioid-naïve patients before elective surgery.

a. It is suggested that opioid-naïve patients awaiting surgery who are in pain be managed with opioid-sparing multimodal analgesia whenever possible.

b. Patients who use opioids in the 30-day preoperative period are twice as likely to have persistent postsurgical opioid use.[8]

c. It is recommended that surgical patients who have received a prescription for opioid analgesics from another provider be encouraged to cease or minimize their opioid use and be educated on the risks and benefits of opioids and nonopioid analgesics.

5. When caring for patients receiving COT for pain, surgical teams are encouraged to develop a perioperative pain management plan with the patient's primary opioid prescriber.

a. As many as one in four patients report taking opioids prior to elective surgery.[102] An estimated 33-70% of patients are on COT prior to undergoing spine surgery.[103]

b. COT predisposes patients to OIH, which may significantly complicate pain control after surgery.[104] c. Patients taking opioids prior to surgery have worse health outcomes, including longer hospital stays, increased costs, a greater need for discharge to rehabilitation facilities, and more readmissions than nonopioid users.[105-106]

c. It is suggested that surgeons avoid escalating the preoperative dose of opioids when managing patients on COT.

d. It is advised that patients on COT not be routinely weaned off opioids prior to surgery. This can

complicate pain control in the perioperative period. i. In the rare case in which a patient must be taken off opioids, it is recommended that the strategy for weaning be individualized to the needs of the patient. It is advised that tapers be gradual enough to minimize withdrawal symptoms.[107]

i. Slower tapers (10% per month or slower) are better tolerated, especially by patients who have used opioids for more than one year.[108-111]
ii. Faster tapers may be appropriate for patients who have used opioids for only weeks to months. A 10% decrease in the original dose per week or slower (until 30% of the original dose is reached) followed by a weekly decrease of 10% in the remaining dose is less likely to trigger withdrawal.[108,110]
iii. Ultra-rapid detoxification under anesthesia is dangerous and should never be trialed.

e. Surgical teams are encouraged to involve pain medicine as appropriate in the care of surgical patients receiving COT.

6. Prior to any surgical procedure, surgical teams are advised to perform a rapid risk assessment to evaluate the patient's risk of developing OUD.[112] Consider obtaining a behavioral health evaluation, a consultation with a pain specialist and/or arranging additional psychosocial support throughout the perioperative period for high-risk patients.

a. Surgical clinicians are advised that no validated screening tools exist for the identification of patients at no or low risk for developing OUD. It is important to consider the potential vulnerability of every patient.
b. Multiple agencies, including the Centers for Disease Control and Prevention (CDC), recommend using an opioid risk screening instrument, such as the Opioid Risk Tool Revised (ORT-R), the Screener and Opioid Assessment for Patients with Pain (SOAPP-R) or the validated shortened version, SOAPP-8, to evaluate for factors that might predispose patients to opioid misuse and addiction..[113-114] While these tools have only been validated for patients with chronic pain, such screening instruments may help surgeons identify patients who are at elevated risk for opioid misuse and addiction.[115]
c. The principles and techniques of motivational interviewing can be effective tools when engaging with patients with SUD. More information about motivational interviewing can be accessed at https:// www.integration.samhsa.gov/clinical-practice/ motivational-interviewing
d. Those with a history of SUD, pain disorders, and/or non-SUD behavioral health disorders appear to have the highest relative risk for developing OUD. Notably, only the absence of a mood disorder is associated with a reduced risk of developing OUD.[116]
e. High-risk criteria for persistent opioid use after surgery include:[117-118]
    i. Personal or family history of any SUD (e.g., alcohol, illicit drugs, prescription drugs)[118-120]
    ii. Current tobacco use[9,117]
    iii. History of any pain disorder[8,119-120]
    iv. Preoperative opioid, benzodiazepine or antidepressant therapy[120]
    v. History of a behavioral health disorder, including mood and anxiety disorders, personality disorders, somatoform disorders, and psychotic disorders[8,116] vi. Lower income[121]
f. The risk of developing persistent opioid use after a surgical procedure appears to depend on patient characteristics more than on the type or magnitude of the surgical procedure.[12]
g. Age is not a strong predictor for the later development of OUD. While some research finds that patients aged 16-30 years and those older than 50 years may be at greater risk, others contradict

these findings.[12]

h. No patient should be denied adequate perioperative analgesia due to concerns about their potential for addiction. Opioids may be cautiously administered even to patients determined to be at increased risk for OUD.
    i. Consider maximizing the use of multimodal analgesia to reduce opioid exposure.
    ii. Consider involving pain services and anesthesia to maximize the use of opioid-sparing medications and regional analgesia.

7. Prior to prescribing an opioid, surgeons are encouraged to perform a risk assessment to screen for factors that may increase the risk of ORADEs.[112]

a. Between 10-13% of patients experience ORADEs after surgery.[2] Patients with ORADEs are estimated to have a 55% longer length of stay, 47% higher cost of care, 36% increased risk of 30-day readmission, and 3.4 times higher risk of inpatient mortality than those who did not.[10,71]

b. Opioid-induced respiratory depression (OIRD) and opioid-induced unintended advancing sedation (OIUAS) have been estimated to occur in between 0.003-4.2% of hospitalized patients who receive intravenous, oral or neuraxial opioids and may cause hypoxic and anoxic brain injury and/or death.[122]

c. Surgeons are advised to consider comorbid health conditions and aspects of the procedure and environment that increase the risk of OIUAS and OIRD and exercise caution when prescribing opioids to those at increased risk for adverse drug reactions and accidental overdose.[122]

d. High-risk medical comorbidities include:
    i. Pulmonary comorbidities (e.g., chronic obstructive pulmonary disease, obstructive or central sleep apnea)
    ii. Cardiac comorbidities (e.g., congestive heart failure)
    iii. Organ dysfunction (e.g., renal or hepatic failure)
    iv. Obesity (BMI≥30 kg/m2)
    v. Obesity hypoventilation syndrome

e. Other patient factors include:[123]
    i. Age greater than 65 years
    ii. Male sex
    iii. Current or past smoker and/or preoperative need for supplemental oxygen
    iv. History of difficult-to-control postoperative pain or over-sedation with opioids
    v. Presurgical opioid use, opioid tolerance, or high milligram morphine equivalent (MME) requirement vi. Current or prior SUD (including alcohol use disorder)[124-125]

f. Procedure- and treatment-related factors include:
    i. Use of general anesthesia, especially longer than six hours
    ii. Operation on the airway, head, neck, thorax or upper abdomen
    iii. Use of continuous opioid infusion (i.e., IV PCA with basal rate)
    iv. Concurrent use of other sedating agents[124-125] v. History or current OIUAS or OIRD (i.e., in a post-anesthesia care unit)
    v. History of previous use of naloxone

8. Surgical teams are encouraged to assess patients for the risk of difficult-to-control postsurgical pain and consider the early involvement of pain and behavioral health services as appropriate. Behavioral health conditions, acute preoperative anxiety, catastrophizing, a history of chronic pain, severe

preoperative pain, and/or preoperative opioid use may increase the likelihood of difficult-to-control postoperative pain.[84,126-128]

a. Patients on COT or MOUD are at increased risk of heightened postoperative pain.[129]
b. It is recommended that patients with known or suspected untreated SUDs (including alcohol use disorder and cannabis use disorder) be referred to addiction medicine and/or behavioral health care when available and appropriate, ideally prior to surgery.
c. Patients with a prior diagnosis of chronic pain or significant preoperative pain may benefit from the close involvement of pain and behavioral health services.[82]
d. Preoperative anxiety may be a predictor of heightened postoperative pain and increased opioid consumption.[82] There is conflicting research regarding risk factors that may predispose patients to preoperative anxiety, but experts agree that perioperative anxiety is common.[130-132]
    i. Comprehensive anxiety screening tools like the Spielberger State-Trait Anxiety Inventory are lengthy, time-consuming, and may not be appropriate for surgical practice. Easily administered behavioral health screening instruments include:
        1. The Amsterdam Preoperative Anxiety and Information Scale[127-128]
        2. The Visual Analogue Scale for Anxiety[133]
        3. The Visual Facial Anxiety Scale
        4. The Surgical Anxiety Questionnaire[134]
    ii. It is recommended that the management of acute preoperative anxiety be tailored to the patient. Surgical teams may ask patients what type of coping assistance might be most helpful. Coping strategies include:[135]
        1. Learning more about their surgery and anesthesia via online and written resources. (Note that some patients may find that information increases their anxiety.)[135]
        2. Distraction techniques.
        3. Calming interactions with surgical team members. Patients report that even brief reassuring conversations with their surgeon or anesthesiologist can help reduce anxiety.[135]
    iii. It is advised that benzodiazepines, long the mainstay of perioperative anxiety management, be an intervention of last resort in this patient population. Other agents have been found to be equally effective and have less impact on general cognitive and psychomotor function.[136-138] Consider using gabapentinoids, clonidine, or melatonin for patients with acute perioperative anxiety.
e. Patients who present with a catastrophizing attitude toward their condition or surgical procedure (e.g., displays of excessive worry, ruminations on actual or anticipated pain, and a feeling of helplessness) may benefit from behavioral health care.[136]

9. Prior to elective surgery, it is recommended that patients be assessed for the risk of developing CPSP, a common and under-recognized complication that may increase the long-term risk of opioid use and dependence.[140-141]

a. First defined as a clinical entity in 1999,[142] CPSP has been characterized more recently as "pain

persisting at least three months after surgery, that was not present before surgery, or that had different characteristics or increased intensity from preoperative pain, localized to the surgical site or a referred area, and other possible causes of the pain were ruled out (e.g., cancer recurrence, infection)."[143]

b. Although the rate of CPSP varies widely across procedures, an estimated 500,000 patients experience persistent postsurgical pain every year. More than 50% of those undergoing certain procedures will go on to develop CPSP.[144-146]
c. c. The etiology of chronic surgical pain is not fully understood, and large-scale prospective studies with detailed pre-, intra-, and postoperative multifactorial assessments are needed to elucidate the causes, treatments, and prognosis of CPSP.[34]
d. While the benefits of pre-emptive analgesia have not been demonstrated consistently, severe postoperative pain has been identified as a risk factor for CPSP. Although the data is conflicting, other potential risk factors for CPSP include:
    i. Duration of surgery[147]
    ii. Female sex
    iii. Genetic factors
    iv. Obesity
    v. Preexisting pain in any location
    vi. Psychological factors (anxiety or depression)
    vii. Younger age
    viii. Tobacco use
e. While no validated screening protocol exists, Appendix B includes a tool that can help identify those at elevated risk of developing CPSP with a reported sensitivity of 60% and a specificity of 83%.
    i. Preventive strategies are encouraged for patients at high risk of developing CPSP, including modified surgical techniques, multimodal pain control throughout the perioperative period, and interventions focused on psychosocial and cognitive behavioral risk factors.[34]
    ii. Limited evidence suggests that the use of amine reuptake inhibitors, gabapentinoids, topical lidocaine and/or capsaicin, ketamine, clonidine, and/or intraoperative use of lidocaine infusion may reduce the incidence of CPSP.[34]
    iii. For patients at high risk of CPSP, the early involvement of pain services is optimal.
    iv. Surgeons are encouraged to consider the likelihood a patient will experience CPSP while thoroughly explaining the risks and benefits of elective procedures, including cosmetic surgery. In some cases, it may be prudent to delay surgery until these risk factors have been addressed.

Intraoperative Practice Recommendations

1. Anesthesiologists are encouraged to minimize the intraoperative use of opioids. Where clinically feasible and appropriate, it is recommended that anesthesiologists and surgeons collaborate to maximize

the use of opioid-sparing multimodal anesthetic and analgesic agents and techniques.

a. Opioid-sparing or opioid-free anesthesia (OFA) may be feasible and effective for a range of surgical procedures.[148]
    i. Minimizing the patient's exposure to opioids reduces respiratory depression, ileus, nausea, vomiting, and sedation in the immediate postoperative period.
    ii. Minimizing the patient's intraoperative opioid exposure spares the μ-receptors for early postoperative analgesia by preventing the occurrence of an acute tolerance phenomenon.[149]
b. Although the intraoperative use of opioids is associated with OIH in the immediate postoperative period, the long-term implications of intraoperative opioid exposure are unknown.[150-152]
c. While there are no large studies comparing outcomes of OFA and anesthetic regimens that include an opioid, OFA has been shown to be safe and feasible in small studies and case reports, where a smoother emergence and lower-immediate postoperative pain have been reported.[153]
d. OFA may be particularly appropriate for patients with chronic obstructive pulmonary disease (COPD), obstructive sleep apnea, obesity hypoventilation syndrome, prior opioid-induced respiratory depression, those with a history of OUD, and patients who request OFA.

2. Surgeons and anesthesiologists are encouraged to use local infiltration of anesthetic and/or regional anesthesia and analgesia whenever feasible and appropriate to improve pain control and decrease opioid use.

a. Local and regional anesthesia and analgesia have been shown to reduce postoperative pain and opioid requirements.[154-155] Carefully selected local and regional techniques can be incorporated into many procedures to improve postoperative pain control.
b. Use of regional anesthesia may reduce the risk of CPSP after some procedures.[154-155]
c. Local and regional anesthesia and analgesia encompass a variety of procedures including neuraxial epidural or spinal anesthesia/analgesia, peripheral nerve and plane blocks, and single-injection or continuous wound infusion (CWI) with local anesthetic.
    i. When feasible and clinically appropriate, surgical teams are encouraged to perform plane and/ or nerve blocks to minimize acute perioperative analgesic requirements.
    ii. Surgeons are encouraged to instill local anesthetic agents prior to incision and/or at the time of closure. Surgeons are encouraged to use adequate volumes of local anesthetic and injection technique that maximizes the efficacy of infiltration. For some procedures, placement of a catheter for CWI may be appropriate.
    iii. For selected procedures and patients, surgeons may consider the instillation of local anesthetic into the peritoneal cavity.

3. Surgeons and anesthesiologists are encouraged to follow enhanced recovery protocols (ERP), which have been found to reduce opioid requirements across a range of surgical procedures. Hospitals and surgical facilities may consider the broad adoption of ERPs for common surgical procedures.

a. ERPs aim to minimize the physiological stress associated with surgery and hasten postoperative recovery through the use of evidence-based measures.[156] Pioneered in colorectal procedures, these protocols have been shown to improve outcomes in many surgical procedures, reduce opioid requirements, shorten recovery times, and reduce complications.[156-157]
b. The four pillars of enhanced recovery: early mobility, optimized nutrition, and early enteral

feeding, multimodal non-narcotic analgesia and goal-directed fluid therapy work synergistically to counteract the physiological impact of surgical interventions.

c. Comprehensive ERPs result in less painful recoveries and lower opioid requirements due to the reduced physiological stress of surgery they produce.[158]
d. While ERPs require significant changes to surgical practice patterns and the coordinated involvement of all surgical team disciplines, they have been repeatedly demonstrated to decrease lengths of stay and reduce costs.[156,159-163]
e. For full enhanced recovery after surgery (ERAS) guidelines for many common procedures, visit:
    i. ERAS Society
    ii. ERAS USA

4. Surgeons are encouraged to employ surgical techniques that minimize tissue damage and inflammation.

a. Minimally invasive techniques result in less postoperative pain and lower opioid requirements.
b. Surgeons are encouraged to preserve nerves whenever possible.
c. A trial of appropriate conservative measures is recommended prior to considering surgical interventions for the treatment of pain. If surgery is warranted, care must be taken to ensure that the procedure has a high likelihood of success and is well supported in the literature.
d. Per the American College of Surgeons, "No operation should be performed without suitable justification. It is the surgeon's responsibility to perform a careful evaluation, including consultation with others when appropriate, and to recommend surgery only when it is the best method of treatment for the patient's problem."[164]

Postoperative Hospital Pain Management

1. Surgical teams are encouraged to take advantage of the synergistic benefits of multimodal analgesia to minimize opioid use and improve pain management. It is recommended that opioid monotherapy for the control of postsurgical pain rarely, if ever, be used as it provides suboptimal relief and increases the likelihood of complications.[165]

a. It is recommended that multimodal analgesia be offered to every surgical patient who reports pain.
b. Multimodal analgesia can reduce opioid requirements and provides more effective pain control than opioid monotherapy.[166-168]
c. Although the perioperative use of multimodal anesthesia is recommended by numerous medical societies, adoption of this practice varies widely among hospitals and surgery centers. While virtually every surgical patient in the United States receives opioid analgesia, the likelihood of receiving a single nonopioid analgesic after surgery ranges from 43-99% depending on the facility, and the likelihood of receiving two nonopioid agents ranges from 8-92%.[169]
d. It is recommended that opioids be ordered pro re nata (PRN) to avoid over-sedation and

unnecessary administration.

e. When opioids are ordered, surgical clinicians are encouraged to pair PRN opioids with scheduled nonopioid analgesics.
f. Unless clinically contraindicated, it is suggested that all surgical patients receive scheduled doses of APAP and an NSAID, which have been demonstrated to lessen postoperative pain and reduce postoperative opioid use across a wide range of surgical procedures.[171-177]
g. Clinicians are encouraged to order opioid and nonopioid medications separately so as to avoid exceeding the maximum recommended dose of nonopioid analgesics contained in combination products (e.g., oxycodone/APAP).

2. Nonpharmacologic options can be used concomitantly with pharmacologic options for the treatment of pain. Although few rigorous studies have proven or quantified the benefits of nonpharmacologic, non procedure-based therapies for the management of surgical pain, such therapies carry little or no risk, may have analgesic benefits, give patients increased control over their perioperative course and can be safely adopted. (See Multimodal Analgesia below.)

a. The Joint Commission requires hospitals to offer nonpharmacologic strategies, "including but not limited to: physical modalities (for example, acupuncture therapy, chiropractic therapy, osteopathic manipulative treatment, massage therapy, and physical therapy), relaxation therapy, and cognitive behavioral therapy."[72]
b. Whenever possible, surgical units are encouraged to offer distraction methods and comfort items, such as books, movies, music, games, and massagers.
c. Simple nonpharmacologic therapies available to patients in nearly any hospital setting include cold and hot packs, therapeutic mobility, positional adjustments, music therapy, chaplain or social worker visits and physical therapy.
d. Education in mindfulness, guided imagery, relaxation, and related psychological techniques may be helpful to receptive patients.[178]
e. It is suggested that cognitive and behavioral therapies delivered by trained personnel be offered to those at elevated risk for opioid dependence and/or CPSP.

3. Surgical teams are encouraged to supplement numerical rating scales of pain intensity with functional assessments of pain. It is advised that the dosage and type of opioid prescribed not hinge solely on a patient's numerical estimation of pain intensity.[179]

a. In addition to subjective reports of pain intensity, it is suggested that safe, effective opioid dosing be based on a careful assessment of multiple objective measures, including the patient's age, comorbidities, sedation level, respiratory condition, concurrent sedating medications, and previous response to opioids.
b. It is recommended that the practice of prescribing specific doses of opioids based solely on a numerical pain intensity scale be avoided.
    i. Compliance with numerical rating scales has not been shown to improve pain control or patient outcomes.[180-184]
    ii. The incidence of over-sedation with opioids more than doubled following the use of an acute pain treatment algorithm guided by a numerical pain rating scale.[185]
    iii. Patient reports of pain intensity are subjective and may be unreliable.[183]
    iv. Administering opioid analgesics based solely on the intensity of a patient's discomfort can

result in both the overtreatment and undertreatment of pain.[184,186]

c. There is no correlation between a given pain intensity score and an effective opioid dose.[187]
d. Ideally, pain assessment also takes into consideration the patient's ability to sleep, ambulate, resume the activities of daily life and participate in physical therapy.
    i. Patients prefer assessments that consider the impact of pain on function.[179,188-189]
    ii. While the adoption of pain assessments that evaluate function may require additional involvement and education of nursing staff, nurses reported preferring the Functional Pain Scale to one-dimensional pain intensity rating systems.[179]
    iii. The American Society of Pain Management Nursing finds that pain intensity alone is inadequate to guide therapy.[190]
e. It is advised that pain severity and function be assessed regularly, and analgesia adjusted appropriately.[72]
    i. Pain management approaches that are individualized to the patient may decrease pain and reduce opioid exposure.
f. It is recommended that an improvement in pain severity without an improvement in function after several days of opioid therapy prompt an evaluation of ongoing treatment and a reassessment of the patient's underlying etiology.

Management of Postoperative Pain After Discharge

1. Surgical teams are encouraged to educate their patients about the benefits of multimodal analgesia and the risks of opioid use following discharge.

a. Opioid-naïve patients who receive an opioid prescription upon hospital discharge are at increased risk for chronic opioid use and/or OUD, and perioperative care teams are encouraged to educate any patient being discharged with a prescription for an opioid on their immediate and long-term adverse effects.[191]
b. Upon discharge, it is recommended that surgical patients be instructed to manage their pain with scheduled doses of APAP and NSAIDs, except when clinically contraindicated.
c. It is suggested that surgeons consider the prescription of additional nonopioid multimodal agents as appropriate.

2. Surgeons are encouraged to prescribe the minimum quantity of opioids anticipated to be necessary upon discharge and to adopt standard prescribing practices for common procedures. TABLE 9 provides procedure-specific guidelines for opioid prescription following common surgeries.

a. Recent studies document the over-prescription of opioids across every surgical subspecialty and reveal a wide variability in individual prescribing practices.[27,192]
b. Pain management plans that are individualized to the patient may reduce opioid exposure. It is recommended that discharge opioid prescribing take into account each patient's:
    i. Inpatient opioid requirements
    ii. Level of pain and function prior to discharge
    iii. Medical comorbidities
    iv. Risk factors for OUD and ORADEs
    v. Preferences surrounding opioid analgesia

c. It is suggested that patients who require no opioids in the 24 hours prior to discharge not be discharged with a prescription for an opioid.[30]
d. If breakthrough pain is a concern, surgeons may consider writing a prescription for a small quantity of opioids (i.e., a quantity sufficient to provide coverage for one or two days until the patient can be reasonably evaluated in the clinic), with instructions to fill it only if necessary.
e. Surgical practices and hospitals can consider adopting standardized opioid prescribing ranges as part of their opioid stewardship and quality improvement initiatives.
f. Outpatient prescriptions of more than 700 MMEs are associated with an increased risk of chronic opioid use.[54]
g. Prescribing a subsequent fill of an opioid prescription is associated with a one in seven chance of persistent opioid use one year later.[54] Prescribing a subsequent fill of a postoperative opioid prescription is associated with a 44% increase in the likelihood of persistent opioid use.[193]
    i. It is suggested that any subsequent fill of an opioid prescription prompt a discussion of the immediate and long-term risks of opioid therapy.
    ii. It is recommended that subsequent fills of opioid prescriptions be limited to a short duration.

3. Surgical groups are urged to collect, track, and share individual opioid ordering and prescribing patterns among their fellow clinicians to decrease variabilities.

a. There are significant variations in prescribing practices among surgeons, even when performing identical operations.[194]
b. A knowledge of current ordering patterns is critical for protocol implementation, clinician education, and quality improvement.
c. Tracking in-hospital opioid ordering patterns and providing comparative data to those within a practice may help reduce discrepancies and identify clinicians who can benefit from further education in multimodal analgesia.
d. It is suggested that this information not be used punitively, but rather to help clinicians understand their own treatment habits and facilitate change.

4. Surgical clinicians are encouraged to consult the Prescription Drug Monitoring Program (PDMP) to assess for possible prescription drug misuse or diversion prior to prescribing opioids.

a. The Drug Enforcement Administration (DEA) requires all practicing physicians to create an account with their state PDMP.[195]
b. Drug monitoring programs have been shown to influence opioid prescribing practices, especially in cases of lost or long-term prescriptions.[196]
c. These programs can help clinicians identify patients with multiple recent prescriptions from various clinicians (i.e., "doctor shopping") and help spot those who are already using other controlled medications on a chronic basis.[197]
d. Although there is limited data to indicate the impact of PDMPs on patient outcomes, these programs can prompt referral to support services, the initiation of MOUD, and/or consultation with a pain management or addiction specialist.
e. Along with information gathered from PDMPs, it is suggested that concerns about possible misuse of controlled substances or the presence of SUD prompt further conversations between the physician and patient.

f. It is advised that information from PDMPs not preclude the use of opioids for the treatment of perioperative pain, but rather be incorporated into the analysis of the risks and benefits of opioid therapy.

5. It is recommended that all patients who receive prescriptions for opioids be educated on the dangers that unsecured opioids pose to others, safe storage methods, and the proper disposal of unused medications.

a. More than 50% of nonmedical opioid users obtain their medication from family members or friends.[198-200]
b. Surgical clinicians are encouraged to inquire about unused opioids at postoperative office visits. Studies show that between 67-92% of patients have unused opioids after surgery, but fewer than 10% actually dispose of their unused medications.[24]
c. The CDC recommends that prescribers discuss the risks that intentionally or unintentionally shared and diverted opioids pose to household members and other individuals. In particular, it is important to emphasize the possibility that others might experience overdose at the same or a lower dosage than was prescribed for the patient.
d. It is recommended that prescriptions be stored safely, ideally in a locked location. The diversion of opioids by adolescents poses a significant risk.
e. It is critical to dispose of unused medication promptly.
f. If disposing of medication at home, it is advised that patients be instructed to:
    i. Remove the medication from its original container and remove any labels and identifying information.
    ii. Mix the pills with something inedible (e.g., kitty litter, coffee grounds, sawdust, home cleanser, etc.).
    iii. Place the mixture in a sealable bag, empty can, or other durable container that prevents leakage.
    iv. Wrap the container in newspaper or a plain brown bag to conceal its contents. Place it in a trash can on the day of collection.
    v. The U.S. Food and Drug Administration (FDA) allows opioids to be flushed down the toilet; however, more environmentally friendly disposal methods are encouraged.[201]
g. An increasing number of communities also offer prescription take-back programs. It is advised that patients be encouraged to use one of the preferred disposal locations found on www.takemedsback.org or participate in a national DEA-sponsored take-back event.
    i. Additional resources include:
        1. http://www.takemedsseriously.org
        2. http://www.deadiversion.usdoj.gov/drug disposal/takeback/index.html

6. During follow-up visits, surgical teams are advised to inquire about pain control, emphasizing the importance of improvements in function and quality of life over numerical measurements of pain intensity.

a. It is suggested that assessments of postsurgical pain on follow-up clinic visits emphasize functional parameters, including the quality of sleep, ability to participate in the activities of daily life and

ability to engage in physical or other therapies.

b. It is recommended that acute pain that persists longer than expected based on the patient's procedure prompt a re-evaluation of the working diagnosis and/ or management approach.
c. A prescription renewal request for an opioid is associated with a nearly doubled risk of developing OUD, and it is advised that such a request prompt surgeons to have an in-person discussion with the patient regarding the dangers surrounding aberrant opioid use.[140]
d. Surgeons are encouraged to consider early consultation with and/or referral to pain and/ or behavioral health clinicians for patients with postoperative pain not typical for their procedure and in the absence of surgical complications.
e. It is recommended that patients with persistent postsurgical pain without an underlying diagnosis be referred to a pain specialist who is experienced in the management of CPSP. While chronic pain is generally defined as pain that lasts longer than three months, early intervention after surgery may benefit those who are at risk of CPSP and persistent opioid use.[34,202]
    i. When managing patients without the aid of local pain medicine specialists, surgeons should consider establishing consultant relationships with pain experts at referral hospitals or telehealth centers.[203-204]

7. Surgical teams are encouraged to prescribe naloxone to patients at elevated risk for opioid overdose.

a. The CDC recommends that naloxone be prescribed for any surgical patient who is discharged with an opioid prescription for more than 50 mg MME per day.
b. b. Compass SHARP recommends that any patient:
    i. On COT be prescribed naloxone.
    ii. With a known or suspected OUD be prescribed naloxone.
    iii. Discharged with a prescription for an opioid and any of the following conditions be prescribed naloxone:
        1. Known or suspected SUD (including alcohol use disorder).
        2. Concurrent use of benzodiazepines or other sedatives.
        3. Have rotated from one opioid to another because of increased tolerance or poor analgesic effects.
        4. A history of tobacco use, COPD, emphysema, asthma, sleep apnea, a respiratory infection or other pulmonary disease.
        5. Renal dysfunction, hepatic disease, cardiac comorbidities, or HIV/AIDS.
        6. Known or suspected uncontrolled depression or taking a prescription antidepressant.
        7. Unreliable access to emergency medical services.

Surgical clinicians can direct patients to BringNaloxoneHome.org for education on how to obtain and use naloxone.

Policy Recommendations

1. Improve PDMPs through interoperability and automated integration into electronic health records (EHRs).

a. Although PDMP's are an important tool for reducing inappropriate opioid prescribing, it is cumbersome to use and often incompatible with busy hospital workflows.
b. Although there is no national data-sharing protocol that crosses state lines, a number of states participate in data-sharing hubs. Without data from surrounding localities, PDMPs cannot provide clinicians with full prescribing information. Access to nationwide data on opioid prescribing practices would enable clinicians to better detect aberrant patterns of opioid prescription and encourage their patients to seek treatment. Legislation is needed to establish a national PDMP and foster the broad exchange of prescribing information.
c. Providers are required to use two separate logins to access their EHRs and PDMPs, a drawback that can make the use of PDMPs cumbersome and disruptive. Legislation that encourages the direct and automatic integration of PDMP data within EHRs would enable the seamless reconciliation of a patient's opioid prescription history with their current medications and health care needs.
d. Automatic queries linked to hospital registration significantly increase the use of PDMPs in clinical decision-making.[205] Systems that incorporate such technology are overwhelmingly favored by clinicians, 98-100% of whom report improved access.[206]

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