



Chronic Pain and Opioid Therapy

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- Number of Publications/ Chapters in books:
36 peer reviewed articles, numerous book chapters and abstracts
- Areas of Interest: Opioid misuse in cancer pain, Interventional therapies for cancer pain, Perioperative pain management in the high-risk patients(Transitional Pain Service)
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I have no conflicts of interest

RULE §166.2

Continuing Medical Education

- (3) At least two of the 24 formal credits of CME which are required by paragraph (1) of this subsection must involve the study of the following topics:
 - (A) best practices, alternative treatment options, and multi-modal approaches to pain management that may include physical therapy, psychotherapy, and other treatments;
 - (B) safe and effective pain management related to the prescription of opioids and other controlled substances, including education regarding:
 - (i) standards of care;
 - (ii) identification of drug-seeking behavior in patients; and
 - (iii) effectively communicating with patients regarding the prescription of an opioid or other controlled substances; and
 - (C) prescribing and monitoring of controlled substances.
- amended to be effective July 12, 2020, 45 TexReg 4520

OBJECTIVES

Outline and elaborate on:

1. Psychosocial model of Chronic pain
2. Opioids for Chronic Pain
3. Monitoring tools for patients on opioids
4. Perioperative management of patients on opioids

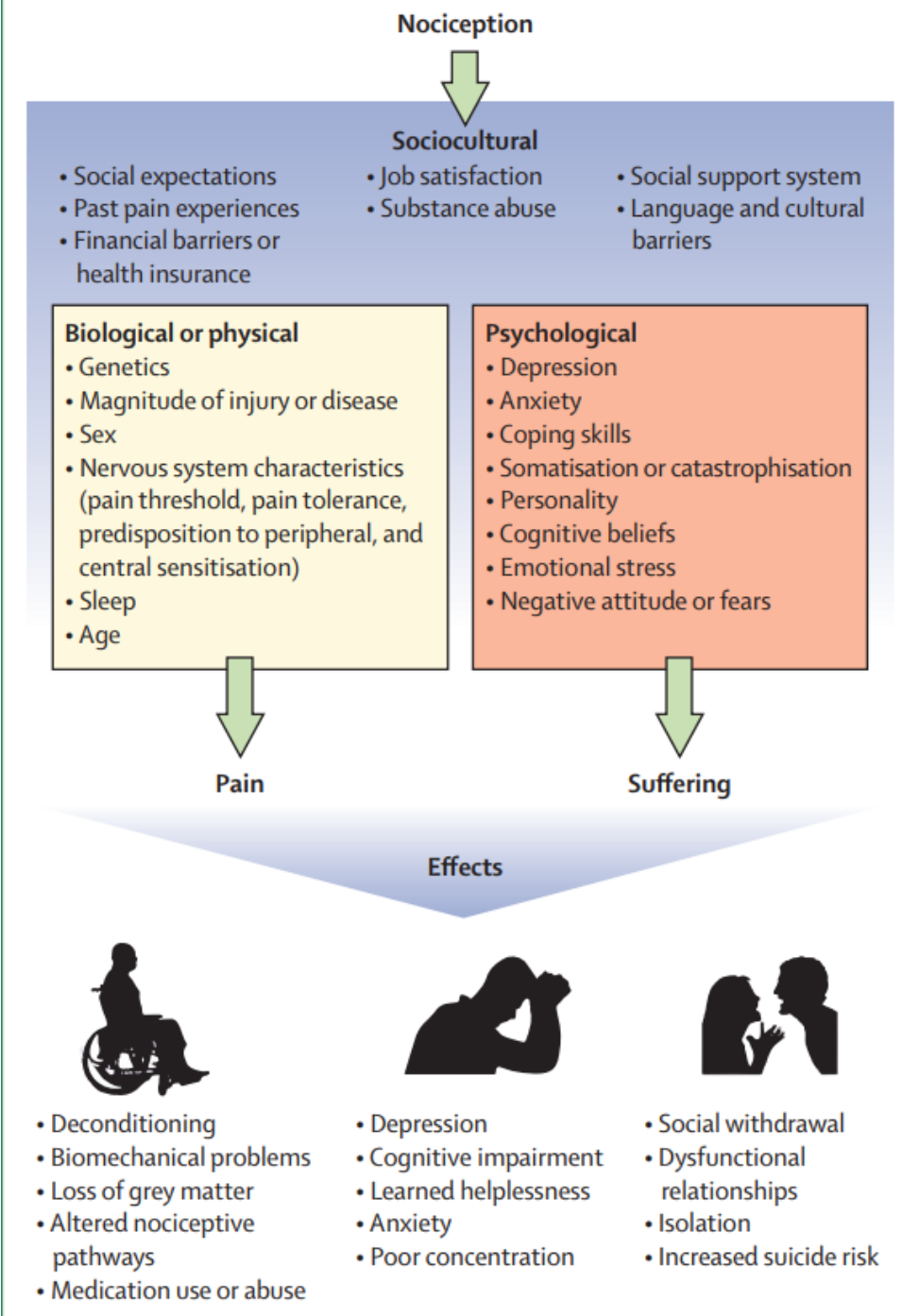
Chronic pain as a symptom or a disease: the IASP Classification of Chronic Pain for the *International Classification of Diseases (ICD-11)*

- Defined as pain that persists or recurs for more than 3 months
- Classification per ICD 11:
 1. Chronic primary pain
 2. Chronic cancer pain
 3. Chronic posttraumatic and postsurgical pain
 4. Chronic neuropathic pain
 5. Chronic headache and orofacial pain
 6. Chronic visceral pain
 7. Chronic musculoskeletal pain

Chronic pain: an update on burden, best practices, and new advances.

Cohen SP, Vase L, Hooten WM. Lancet. 2021 May 29;397(10289):2082-2097

- Chronic pain exerts an enormous personal and economic burden.
- Affects more than 30% of people worldwide.
- Chronic pain might be best considered to be a disease.
- The biopsychosocial model of pain presents physical symptoms as the denouement of a dynamic interaction between biological, psychological, and social factors.
- Guidelines typically recommend a personalized multimodal, interdisciplinary treatment approach, which might include **pharmacotherapy**, psychotherapy, integrative treatments, and invasive procedures



An algorithmic approach for long-term opioid therapy in chronic pain.

Universal Precautions

STEP I	Comprehensive initial evaluation
STEP II	Establish diagnosis ◆ X-rays, MRI, CT, neuro-physiologic studies ◆ Psychological evaluation ◆ Precision diagnostic interventions
STEP III	Establish medical necessity (lack of progress or as supplemental therapy) ◆ Physical diagnosis ◆ Therapeutic interventional pain management ◆ Physical modalities ◆ Behavior therapy
STEP IV	Assess risk-benefit ratio ◆ Treatment is beneficial
STEP V	Establish treatment goals
STEP VI	Obtain informed consent and agreement
STEP VII	Initial dose adjustment phase (up to 8-12 weeks) ◆ Start low dose ◆ Utilize opioids, NSAID's and adjuvants ◆ Discontinue • Lack of analgesia • Side effects • Lack of functional improvement

STEP VIII	Stable phase (stable – moderate doses) ◆ Monthly refills ◆ Assess for four A's • Analgesia • Activity • Aberrant behavior • Adverse effect ◆ Manage side effects
STEP IX	Adherence monitoring ◆ Prescription monitoring programs ◆ Random drug screens ◆ Pill counts
STEP X	Outcomes ◆ Successful – continue • Stable doses • Analgesia, activity • No abuse, side effects ◆ Failed – discontinue • Dose escalation • No analgesia • No activity • Abuse • Side effects • Non-compliance

VULNERABILITY TO OUD

- **Genetic Factors:**
 - 40-60% of the vulnerability to addiction is attributable to genetic factors
 - Six SNPs found in four genes were associated with OUD
- **Environmental Factors:**
 - Low socioeconomic class
 - Poor parental support
 - Within–peer group deviancy
 - Drug availability
- **Comorbid Mental Illness:**
 - The risk for a SUD in individuals with mental illness is significantly higher than for the general population
 - The high comorbidity probably reflects, in part, overlapping environmental, genetic, and neurobiological factors that influence drug use and mental illness

Risk factors

- < 35 years
- Male sex
- Cigarette smoking
- h/o ETOH and/or other substance abuse
- Family h/o substance abuse
- H/O sexual and or physical abuse
- Co-morbid psychiatric disease
- Doses over 120mg MED per day and use of short acting opioids
- History of legal problems, prior motor vehicle collisions, and past driving under the influence (DUI) or drug convictions

Delgado-Guay M et al. Symptom distress in advanced cancer patients with anxiety and depression in the palliative care setting. *Support Care Cancer* 2009; 17:573-579.

Han B, et al Epidemiol. 2010 Apr;20(4):289-97. Associations between duration of illicit drug use and health conditions: results from the 2005-2007 national surveys on drug use and health.

* Mark D. Sullivan et al. Risks for Possible and Probable Opioid Misuse Among Recipients of Chronic Opioid Therapy in Commercial and Medicaid Insurance

Plans: the TROUP Study. *Pain*. 2010 August ; 150(2): 332–339. doi:10.1016/j.pain.2010.05.020.

CDC Clinical Practice Guideline for Prescribing Opioids for Pain — United States, 2022

- **Opioid naïve: When starting opioid therapy for acute, subacute, or chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release and long-acting (ER/LA) opioids.**
- **For patients already receiving opioid therapy:**
 1. If benefits outweigh risks of continued opioid therapy, clinicians should work closely with patients to optimize nonopioid therapies while continuing opioid therapy.
 2. If benefits do not outweigh risks of continued opioid therapy, clinicians should optimize other therapies and work closely with patients to gradually taper to lower dosages.

Which OPIOID?

OPIOID	Formulation
Codeine	IR: tablet, elixir
Morphine	IR and ER: tablet, elixir, parenteral
Oxycodone	IR and ER: tablet, elixir
Oxymorphone	IR and ER: tablet, elixir
Hydrocodone	IR and ER: tablet, elixir
Hydromorphone	IR and ER: tablet, elixir, parenteral
Fentanyl	Transdermal, parenteral
Methadone	tablet, elixir, parenteral
Tramadol	IR and ER: tablet
Tapentadol	IR and ER: tablet
Buprenorphine	Buccal, transdermal, parenteral

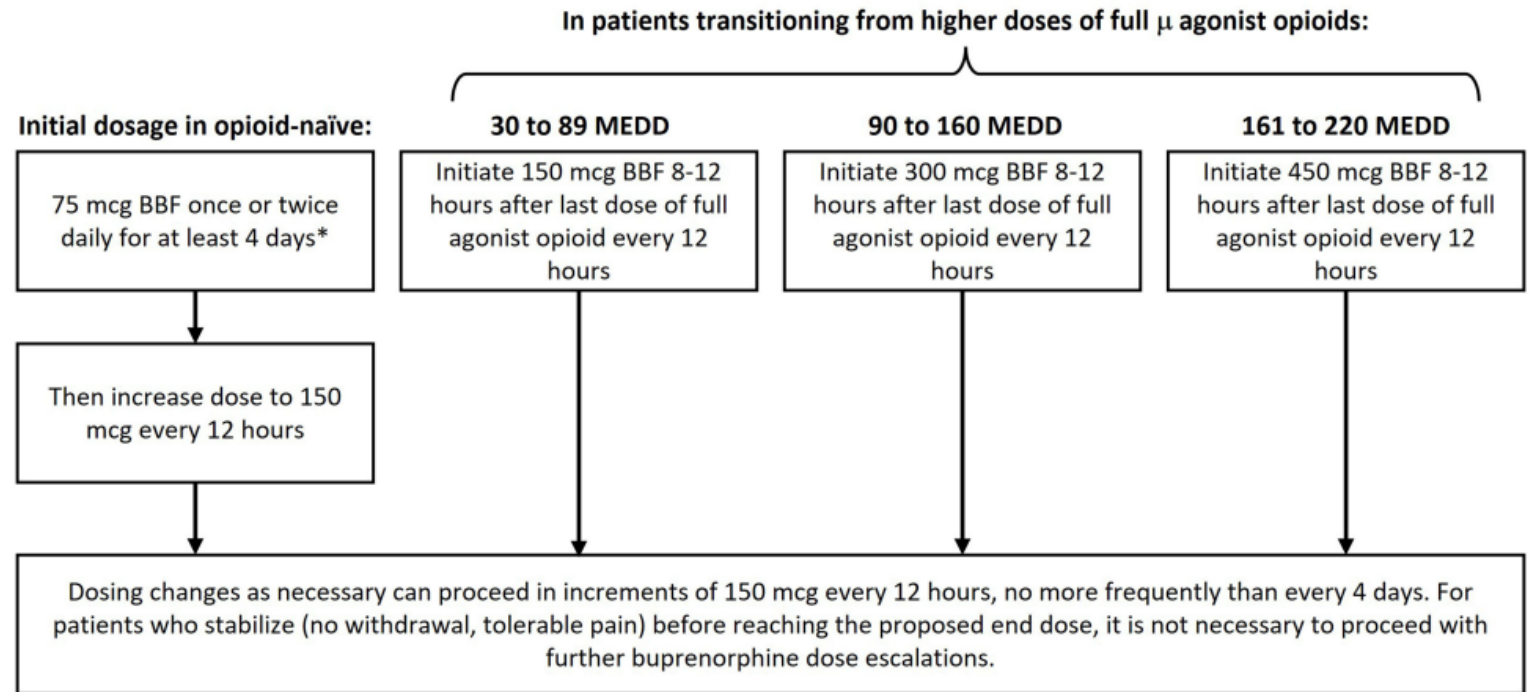
Recommended low-dose opioid therapy for select opioids showing starting doses and maintenance doses.

Opioid	Recommended Starting Dose For Opioid-Naive Patients	Recommended Starting Dose For Opioid Exposed Patient's High Doses Leading To High Risks.	Recommended Maintenance Dose
Hydrocodone	5 to 10 mg, 2 to 3 times daily	5 to 10 mg, 3 to 4 times daily	30 to 40 mg for 24 hours
Morphine			
Morphine Immediate Release	Not recommended	10 mg, 2 to 3 times	30 to 60 mg per day
Morphine Sustained Release	Not recommended	15 to 30 mg twice daily	60 to 90 mg daily
Oxycodone			
Oxycodone	5 to 10 mg, 2 to 3 times daily	5 to 10 mg, 3 to 4 times daily	30 to 40 mg per day
Oxycodone Sustained Release	Not recommended	10 mg for 12 hours	30 to 60 mg for 24 hours
Methadone	Not recommended	2 to 5 mg, 2 to 3 times daily	10 to 30 mg per day
Transdermal Fentanyl	Not recommended	12.5 to 25 mcg q72h	25 to 50 mcg per 72 hours
Hydromorphone			
Hydromorphone Immediate Release	2 mg bid or tid	2 to 4 mg, 2 to 3 times daily	8 to 16 mg per day
Hydromorphone Sustained Release	Not recommended	5 mg to 10 mg, 2 times daily	20 to 40 mg daily
Codeine	15 mg bid or tid	30 mg bid to qid	120 to 160 mg daily
Oxymorphone			
Oxymorphone Immediate Release	5 mg bid or tid	5 to 10 mg 2 to 3 times daily	30 to 40 mg per day
Oxymorphone Sustained Release	Not recommended	10 mg q12h	40 to 60 mg per day
Tramadol			
Tramadol	50 mg bid or tid	50 mg 3 to 4 times daily	150 to 300 mg per day
Tramadol Sustained Release	Not recommended	200 mg daily	200 to 350 mg per day
Tapentadol	50 mg bid or tid	50 mg bid or tid	Max 400 mg
Tapentadol Sustained Release	Not recommended	200- 400 mg daily	Max 400-500 mg

Manchikanti L et al. ASIPP guidelines for responsible opioid prescribing in chronic non-cancer pain: Part 2--guidance. Pain Physician. 2012 Jul;15(3 Suppl):S67-116. PMID: 22786449.

Buprenorphine for pain

- Buprenorphine is a partial agonist opioid available in different formulations and doses
- Buprenorphine buccal film(BBF) and the buprenorphine transdermal patch are currently indicated for long-term pain management.



Buprenorphine Products	Dosage Form	Indication	Dosage Strengths
Buprenorphine Belbuca®	Buccal film	Chronic pain	75 mcg, 150 mcg, 300 mcg, 450 mcg, 600 mcg, 750 mcg, 900 mcg
Buprenorphine Butrans®, also available as generic	Transdermal patch	Chronic pain	5 mcg/h, 7.5 mcg/h, 10 mcg/h, 15 mcg/h, 20 mcg/h

Adler J et al. Frontline Perspectives on Buprenorphine for the Management of Chronic Pain. J Multidiscip Healthc. 2024 Mar PMID: 38563040;

Equianalgesic Opioid Dose Conversion

Opioid	Oral Dose	IV/SC Dose	Conversion Factor IV/SC → PO	Conversion Factor PO → PO Morphine
Morphine	30mg	12mg	2.5	1
Oxycodone	20mg	N/A	N/A	1.5
Hydrocodone	30mg	N/A	N/A	1
Oxymorphone	10mg	1mg	10	3
Hydromorphone	7.5mg	3mg	2.5	4
Fentanyl	N/A	120mcg	N/A	

Transdermal Fentanyl

- *Option 1:*

Oral Morphine (mg/day)	Transdermal Fentanyl (mcg/hour)
30-90	25
91-150	50
151-210	75
211-270	100
Each additional 60mg/day	An additional 25mcg/hour

- *Option 2:* 2-2.5 mg PO morphine = 1mcg/hr TDF

Assessment and monitoring of Addictive behaviors

- MD assessment(pain pathology, psychosocial history, 4 As...)
- Psychologist assessment
- Risk Assessment Screening tools
- Prescription Drug Monitoring Program
- Urine Drug screening
- Non-medical opioid use behaviors

RISK ASSESSMENT TOOLS

Table 3 Common validated tools for risk assessment and monitoring of patients receiving chronic opioid therapy						
Tool	Comment	Administered by	Number of items	Score range	Cut-off score for increased risk of NMOU	Sensitivity and specificity ^a
CAGE ¹⁵⁵	Assessment of risk of NMOU in patients considered for COT; not specific to only patients with pain	Clinician or patient	4	0–4	≥2	• Sensitivity 93% • Specificity 76%
CAGE-AID ⁷³	A version of CAGE for the assessment of both alcohol and illicit drug use	Clinician or patient	4	0–4	≥2	• Sensitivity 88% • Specificity 55%
SOAPP V.1 (REF. ⁷⁴)	Assessment of risk of NMOU in patients considered for COT	Patient	14	0–56	≥7	• Sensitivity 91% • Specificity 69%
SOAPP-Revised ¹⁵⁶	Revised version of SOAPP V.1	Patient	24	0–96	≥18	• Sensitivity 81% • Specificity 68%
SOAPP-Short Form ⁶⁹	An abbreviated version of SOAPP V.1	Patient	5	0–20	≥7	• Sensitivity 86% • Specificity 67%
ORT ⁶⁸	Assessment of risk of NMOU in patients considered for COT	Patient	10	0–26	• Low 0–3 • Moderate 4–7 • High ≥8	c-Statistic: males 82%; females 85%
DIRE inventory ^{75,157}	Assessment of risk of NMOU in patients considered for COT; prediction of which patients will have effective analgesia and be compliant with opioid therapy	Clinician	7	7–21 ^b	≤13	• Sensitivity 94% • Specificity 87%
PMQ ^{77,158}	Identification of NMOU in patients already receiving COT	Patient	26	0–104	≥30	• Sensitivity 92% • Specificity 80%¹⁵⁸
COMM ¹⁵⁹	Identification of NMOU in patients already receiving COT	Patient	17	0–68	≥9	• Sensitivity 77% • Specificity 68%
ABC ⁷⁸	Identification of NMOU in patients already receiving COT	Clinician	20	0–20	≥3	• Sensitivity 88% • Specificity 86%

Box 1. Nonmedical opioid use-related behaviors. ^{1,2}

- Frequent unscheduled appointments or telephone calls for early opioid refills
- Self-escalation or request for excessive increase in the opioid dosage not consistent with patient's pain syndrome
- Reports of lost or stolen opioid prescription/medication
- Frequent emergency room visits for opioids
- Seeking opioids from multiple providers ("doctor shopping")
- Requests for a specific opioid
- Resistance to changes in the opioid regimen even when clinically indicated
- Use of non-prescribed restricted medications or illicit drugs
- Requesting opioids for its euphoric effect or for symptoms such as anxiety or insomnia
- Reports of impaired functioning in daily activities due to opioid use
- Family members/ caregivers expressing concern over patient's use of opioids
- Reports of hoarding drugs
- Obtaining opioids from non-medical sources
- Reports of stealing, tampering, or forging opioid prescriptions
- Discrepancy in pill counts without good explanation

Urine Drug Testing

Recommendation #10 from the CDC Guideline for Prescribing Opioids for Chronic Pain states, “When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs.”



When to conduct urine drug testing:

All patients on long-term opioid therapy should have periodic urine drug tests (UDT). Medical experts agree that an annual UDT for all patients should be standard practice¹. Subsequent UDTs should be determined on an individual patient basis, at the discretion of the clinician. Before ordering a UDT, have a plan for responding to unexpected results.

<https://www.drugabuse.gov/sites/default/files/files/UrineDrugTesting.pdf>

Owen GT, Burton AW, Schade CM, Passik S. Urine drug testing: current recommendations and best practices. Pain Physician. 2012 Jul;15(3 Suppl):ES119-33. PMID: 22786451.

Enzyme Mediated Immunoassay

Usually done as point of care (POC) testing

It has adequate sensitivity but lacks specificity

It can test for numerous drugs and drug classes

It does not distinguish between different drugs of the same class so it can lead to “false –negatives”

It has cross reactivity with other substances and can lead to “False-positives”

Confirmatory testing is required

Test or drug category	Drugs that may cause a false-positive result
Amphetamines	Amantadine (Symmetrel), bupropion (Wellbutrin), chlorpromazine, desipramine (Norpramin), fluoxetine (Prozac), L-methamphetamine (in nasal decongestants*), labetalol (Normodyne), methylphenidate (Ritalin), phentermine, phenylephrine, phenylpropanolamine, promethazine (Phenergan), pseudoephedrine, ranitidine (Zantac), thioridazine, trazodone (Desyrel)
Benzodiazepines	Oxaprozin (Daypro), sertraline (Zoloft)
Cocaine	Topical anesthetics containing cocaine
Opiates	Dextromethorphan, diphenhydramine (Benadryl), Fluoroquinolones (<i>ciprofloxacin</i> , <i>levofloxacin</i> , and <i>ofloxacin</i>), poppy seeds, quinine, rifampin, verapamil(in methadone assay)
Phencyclidine	Dextromethorphan, diphenhydramine, ibuprofen, imipramine (Tofranil), ketamine (Ketalar), meperidine (Demerol), thioridazine, tramadol (Ultram), venlafaxine (Effexor)
Tetrahydrocannabinol	Dronabinol (Marinol), non-steroidal anti-inflammatory drugs (<i>ibuprofen</i> , <i>naproxen</i> (Naprosyn), and <i>sulindac</i> (Clinoril)), proton pump inhibitors (pantoprazole[Protonix])

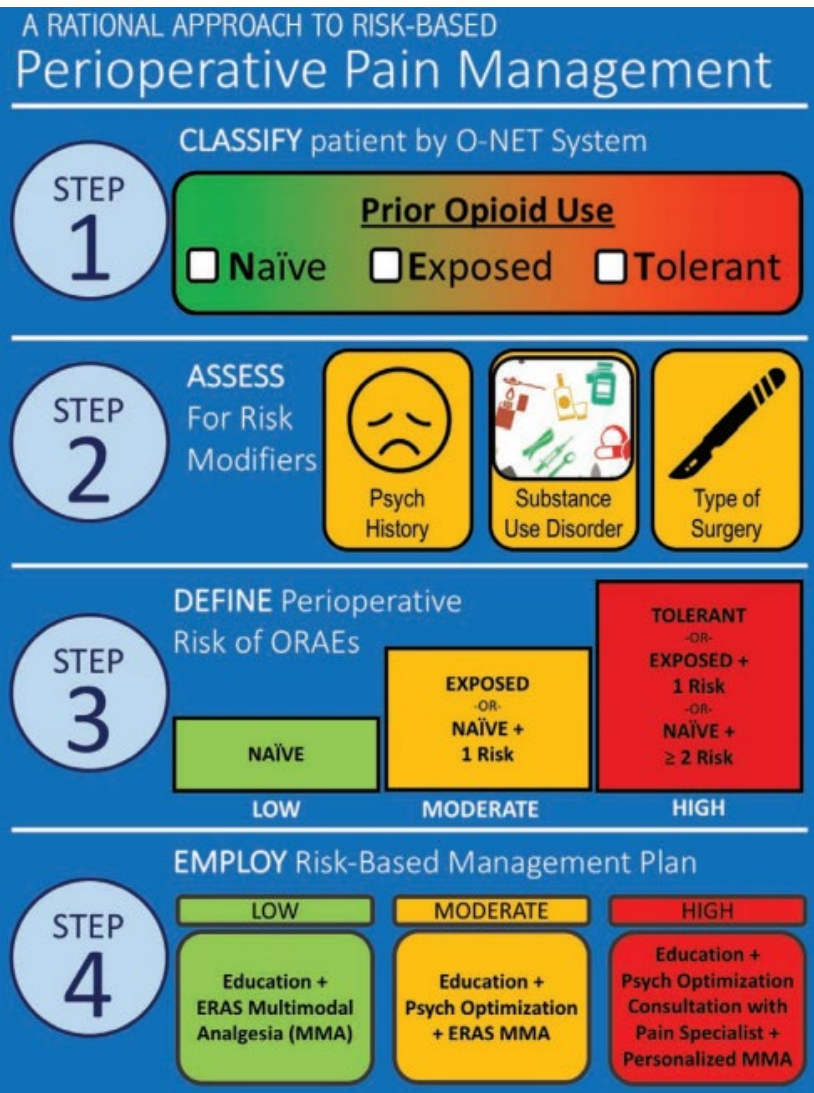
OPIOID	METABOLITES
MORPHINE	60% of a morphine dose is converted to M3G and 10% to M6G. Small amount to normorphine, hydromorphone. Codeine(impurities)
CODEINE	Morphine(5-10%), norcodeine, Hydrocodone, Hydromorphone(impurities)
HYDROMORPHONE	hydromorphone-3-glucuronide, hydromorphone-6-glucuronide,
HYDROCODONE	norhydrocodone, dihydrocodeine, isodihydrocodeine, hydromorphone, dihydromorphine, conjugated hydromorphol, nordihydrocodorphine, and isodihydromorphine
OXYCODONE	Noroxycodone, noroxymorphone, Hydrocodone(impurities)
OXYMORPONE	Noroxymorphone
FENTANYL	Norfentanyl (99%), despropionylfentanyl' hydroxyfentanyl, hydroxynotfentanyl and N-phenylpropion amide
METHADONE	EDDP(major), methadol and normethadol
TRAMADOL	O-desmethyltramadol(active), N-desmethyl tramadol and other minor.
BUPRENORPHINE	When used in low doses, the drug might not have enough metabolites in the urine, leading to a false negative UDT

Drugs of Abuse Screening and detection times

Drug	Window for detection
Hydrocodone	1–2 days
Oxycodone	1–3 days
Morphine	3–4 days
Methadone	5–10 days
Hydromorphone	1–2 days
Meperidine	1–2 days
Codeine	1–3 days
Heroin	1–3 days
Benzodiazepines	Up to 30 days
Barbiturates	2–10 days
Marijuana	1–3 days for casual use, 11 weeks for chronic use
Cocaine	1–3 days
Amphetamine	2–4 days
Methamphetamine	2–4 days
Heroin	1–3 days
Phencyclidine	2–8 days

Chakravarthy, K., Goel, A., Jeha, G.M. *et al.* Review of the Current State of Urine Drug Testing in Chronic Pain: Still Effective as a Clinical Tool and Curbing Abuse, or an Arcane Test?. *Curr Pain Headache Rep* **25**, 12 (2021).

Role of Transitional Pain Service



Optimize before surgery	Perioperative management	Post-operative pain management
Wean opioids to lowest effective dose	Individualized multi-modal	Multi-modal, opioid sparing
Optimize psychosocial co-morbidities	Opioid free/sparing	Avoid opioid dose escalation
Individualized preoperative education	Regional anesthesia	Limiting discharge scripts to expected duration of pain
Anticipate and communicate discharge needs	Lidocaine/ketamine infusion	Coordination of opioid tapering
Referral to Periop pain specialist	Other: music, hypnosis, TENS	

Perioperative pain management in patients with chronic pain, preoperative opioid tolerance, or substance use disorder.

- Challenge of caring for this population
- Need for multidisciplinary care and a comprehensive approach.
- Consortium of 15 professional healthcare societies
- Year-long modified Delphi consensus process and summit.
- Seven guiding principles for the perioperative care of patients with chronic pain, substance use disorder, and/ or preoperative opioid tolerance.



SCREEN FOR SUBSTANCE USE PREOP, RISK STRATIFY, REFER for treatment when indicated



COORDINATE CARE PREOP for complex patients and CONSULT with a pain medicine, behavioral health, or addiction medicine specialist to OPTIMIZE TREATMENT AND PLAN



**FOR OPIOID TOLERANT PATIENTS COORDINATE and PLAN with the preop prescriber
CONTINUE HOME REGIMEN, SUPPLEMENT ANALGESICS AS NEEDED**



**FOR OPIOID TOLERANT PATIENTS return to preoperative dose or lower as soon as possible
with an INDIVIDUALIZED TAPER PLAN**



**INFORM AND EDUCATE PATIENTS AND CAREGIVERS on OPIOID RISKS, how to RECOGNIZE
and TREAT RESPIRATORY DEPRESSION; AVOID sedative medications and alcohol, and CALL
FOR HELP**



**IF ADVERSE EFFECTS of medications or UNCONTROLLED PAIN, CONSULT a pain specialist or
anesthesiologist**



**IF EXPERT CONSULTATION IS NEEDED but IN PERSON EVAL not accessible UTILIZE
TELEHEALTH to access pain medicine, behavioral health, or addiction medicine specialists.**

Perioperative care of patients with OUD

Medication-assisted treatment of opioid use disorder: perioperative considerations			
Drug	Preoperative	Day of Surgery	Postoperative
Methadone	Continue daily dose. Document methadone dose and methadone provider's contact information for postoperative follow-up.	Patient should receive usual daily dose. If unable to take PO, give IV (reduce dose by 1/2 to 2/3 and split into TID dosing). Plan for multimodal pain management.	Continue daily dose but consider switching to TID dosing. Continue multimodal pain management. Arrange for follow-up with methadone provider early in the postoperative period. If daily dosing patient may need to go to methadone clinic postoperatively. Discharge with the lowest dose and shortest duration of additional opioids as possible
Naltrexone	Oral—discontinue >48 h preoperatively. XR-NXT—discontinue 30 d preoperatively.	Confirm last dose >48 h for oral and >30 d for implanted XR-NXT. Plan for multimodal pain management.	Continue multimodal pain management. Patient may be more sensitive to opioids. Resume after patient has been off opioids for 7 d.

Perioperative care of patients on Buprenorphine

- Perioperative management of buprenorphine is evolving from the traditional teaching of holding buprenorphine to 'open up receptors' to a consensus of continuing buprenorphine with or without naloxone through the perioperative period.
- Buprenorphine should not be routinely discontinued in the perioperative setting.
- Buprenorphine can be initiated in untreated patients with OUD and acute pain in the perioperative setting to decrease the risk of opioid recurrence and death from overdose.

Buprenorphine Management

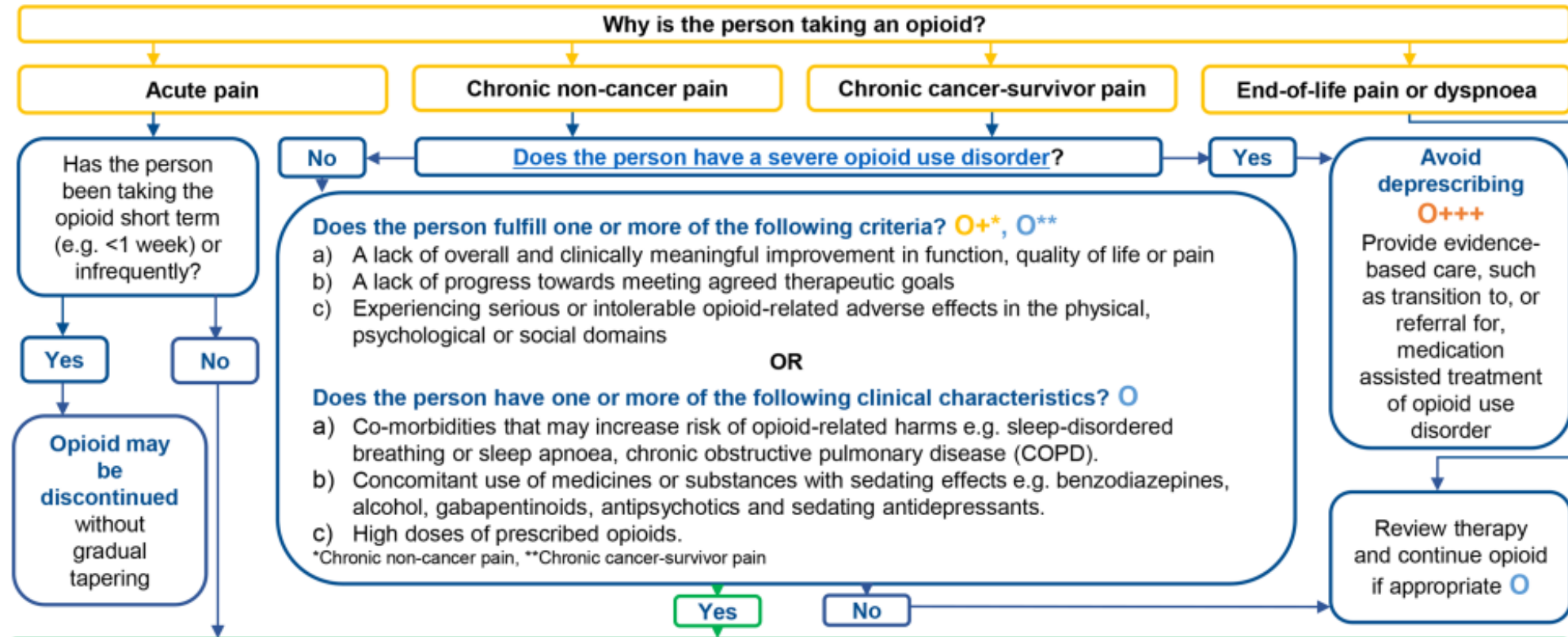
Mild/Moderate Pain:

- Home bupre-norphine dose can be split into two times per day/three times per day dosing to provide an analgesic effect.

Severe Pain:

- Home buprenorphine dose can be split into three times per day dosing to provide improved analgesic effect.
- Consider increasing dose of buprenorphine to 24-32 mg given in divided doses or using buprenorphine intravenous 0.3 mg every 6 hours prn
- Consider close monitoring if increasing or adding opiate for pain

Opioid Deprescribing



Opioid Deprescribing

Engage the person (discuss potential risks and benefits of deprescribing, **establish a deprescribing plan** )

Initiate deprescribing

- Gradually taper opioids. Abrupt cessation without prior dose reduction may increase risks of harm ++
- Tailor the deprescribing plan based on the person's clinical characteristics, goals and preferences +
- Conduct regular monitoring and review 
- Use interdisciplinary or multidisciplinary care, or a multimodal approach which emphasises non-pharmacological & self-management strategies ++
- Consider the use of evidence-based co-interventions to support opioid deprescribing + (e.g. cognitive behavioural therapy)

Key

 Recommendation for,  Recommendation against,  Conditional Recommendation for,  Conditional Recommendation against,  Consensus Recommendation
+ Very Low Certainty Evidence, ++ Low Certainty Evidence, +++ Moderate Certainty Evidence, ++++ High Certainty Evidence (from systematic evidence review and GRADE approach).

Opioid Deprescribing

Engaging the person

The use of an [opioid deprescribing conversation guide](#) may assist healthcare professionals to initiate and continue conversations about opioid deprescribing.

- Discuss treatment goals.
- Ask about side effects.
- Tailor discussion about benefits and harms to the individual.
- Explore fears and concerns about deprescribing.

Tapering advice

Tailor the deprescribing plan based on the person's clinical characteristics, goals and preferences. Consider:

- **<3 months use:** reduce the dose by 10 to 25% every week
- **>3 months use:** reduce the dose by 10 to 25% every 4 weeks
- **Long-term opioid use (e.g., >1 year) or on high doses:** slower tapering and frequent monitoring

Opioid Deprescribing

Monitoring advice

The success of opioid deprescribing may be measured by assessing progress in relation to goals achieved over time.

Monitor and document:

- Cognitive and functional status, behavioural and psychological symptoms, and how these have changed over time.
- Monitor and manage parameters including function, pain, sleep, mood, withdrawal effects and dependence.
- Discuss the increased risk for overdose on abrupt return to a previously prescribed higher dose after deprescribing.
- Consider the provision of **naloxone** for persons taking opioids at risk of opioid overdose when prescribing or deprescribing opioids.

Symptomatic medications for use in opioid withdrawal

(adapted from the 2018 [Alcohol and other Drug Withdrawal: Practice Guidelines, 3rd ed.](#))

Symptoms	Symptomatic Medication(s)
Nausea and vomiting	Antiemetics such as metoclopramide 10 mg three times a day as required for up to three to four days or prochlorperazine 5 mg three times a day for 4–7 days, best 30 minutes before food or as required, ondansetron 4–8 mg, every 12 hours as required. Note: Also encourage fluids and a simple diet
Diarrhoea	Anti-diarrhoeals such as loperamide
Abdominal cramps	Antispasmodics such as hyoscine butylbromide
Muscles and joint pains	Non-steroidal anti-inflammatory agents such as ibuprofen (avoid if contraindications are present) or paracetamol

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