

# NIH Pain Consortium

Centers of Excellence in Pain Education



## Acute Pain Management in Patients with Opioid Use Disorder

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## Introduction

Eric is a 23-year-old man actively using IV heroin presents with right leg pain and swelling after injecting heroin into the muscle. Labs are notable for white blood cell count of greater than sixty thousand.

Eric has the following medical notes:

- History of appendectomy; no other known medical problems.
- Diagnosed with necrotizing fasciitis and admitted to the ICU.
- Requires debridement in the operating room and extensive wound care on the nursing unit.
- Has recently been on methadone maintenance but stopped within the past several months.

## Case Goals and Objectives

- Describe the challenges of acute pain management in patients with Opioid Use Disorder (OUD)
- Identify appropriate goals and treatment modalities for acute pain in patients with OUD
- Discuss communication strategies with the patient and healthcare team to keep patients safe and engaged in care

# Opioid Use Disorder

## Definition

“Opioid addiction is a primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.”<sup>1</sup>

## Opioid Use Disorder Diagnostic Criteria:

<https://www.cdc.gov/drugoverdose/training/oud/accessible/index.html>

## Addiction: A Neurobiological Disease

- Involves the brain’s reward (limbic) center
  - An area of the brain that is associated with the affective responses to pain
  - Involves dopamine
- Susceptible individuals may have an alteration of the limbic or related system that causes sensitization to the reinforcing effects of drugs

Addiction is a neurobiological (physiological) disease. It is important to understand that genetic, sociocultural, and environmental factors may contribute to the onset and progression of addiction. Addiction involves stimulation of the brain’s reward center, a component of the limbic system that generates affect or emotions. The reward circuit is mediated by the neurotransmitter, dopamine. Certain drugs such as opioids and other

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<sup>1</sup> American Academy of Pain Medicine, American Pain Society, & American Society of Addiction Medicine. (2001). Public policy statement on definitions related to the use of opioids in pain treatment. Retrieved October 5, 2007, link updated June 18, 2019, from <https://www.asam.org/advocacy/find-a-policy-statement/view-policy-statement/public-policy-statements/2011/12/15/definitions-related-to-the-use-of-opioids-for-the-treatment-of-pain-consensus-statement>

“abusable” substances can stimulate this reward system. Alterations in the brain’s reward center (limbic system) may result in more susceptibility to addiction. Genetic, social, cultural, and environmental factors may all alter the circuits contributing to the development of addictive disease. <sup>2</sup>

## Opioid Epidemic

How big is the opioid epidemic?

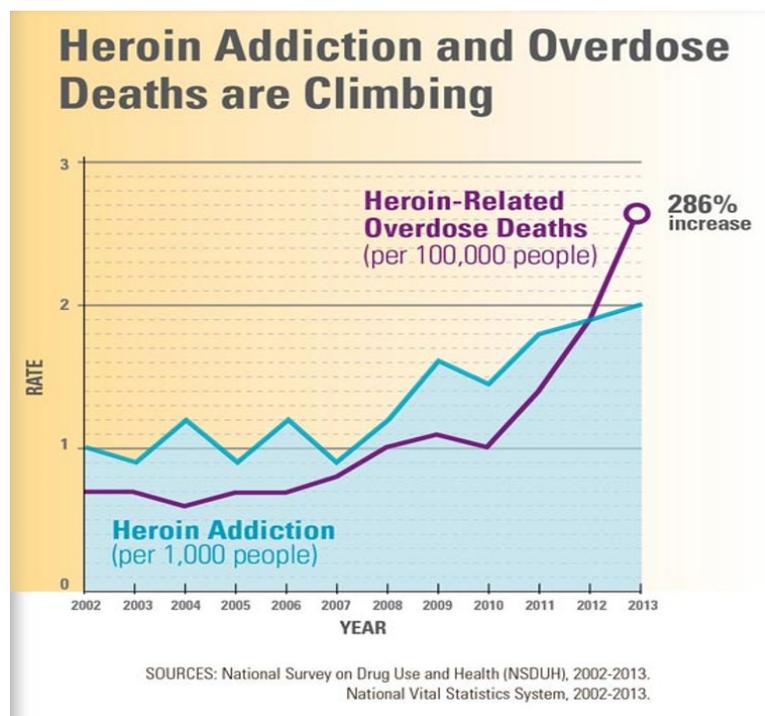


Figure 1: Heroin Addiction and Overdose Deaths

- From 1999-2011 the rate consumption of hydrocodone more than doubled and consumption of oxycodone increased 500%
- During same time frame, opioid related death rate nearly quadrupled

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<sup>2</sup> Ballantyne, J. C., & LaForge, K. S. (2007). Opioid dependence and addiction during opioid treatment of chronic pain. *Pain*, 129(3), 235-255.

- 1997 to 2011, there was a 900% increase in individuals seeking treatment for addiction to opioids<sup>3</sup>

## Test Your Knowledge: Patients with OUD

Compared to the general population, patients with OUD:<sup>4</sup>

*(Choose all that apply)*

1. [Have poorer physical health](#)
2. [Have poorer mental health](#)
3. [More likely to be hospitalized](#)
4. [More likely to be readmitted](#)
5. [Higher mortality rates](#)

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<sup>3</sup> SAMHSA, 2013 <http://www.samhsa.gov/data/sites/default/files/2013MHDetTabs/NSDUH-MHDetTabs2013.pdf>, CDC Injury Prevention & Control: Opioid Overdose <http://www.cdc.gov/drugoverdose/data/heroin.html>

<sup>4</sup> Degenhardt L, Bucello C, Mathers B, Briegleb C, Ali H, Hickman M, McLaren J. Mortality among regular or dependent users of heroin and other opioids: a systematic review and meta-analysis of cohort studies. *Addiction* 2011;106(1):32-51. PMID:21054613 DOI:[10.1111/j.1360-0443.2010.03140.x](https://doi.org/10.1111/j.1360-0443.2010.03140.x)

Grella CE, Lovinger K. Gender differences in physical and mental health outcomes among an aging cohort of individuals with a history of heroin dependence. *Addict Behav* 2012;37(3):306-312. PMID: 22154506 PMCID: [PMC3258372](https://pubmed.ncbi.nlm.nih.gov/PMC3258372/) DOI:[10.1016/j.addbeh.2011.11.028](https://doi.org/10.1016/j.addbeh.2011.11.028)

Walley AY, Paasche-Orlow M, Lee EC, Forsythe S, Chetty VK, Mitchell S, Jack BW. Acute care hospital utilization among medical inpatients discharged with a substance use disorder diagnosis. *J Addict Med* 2012;6(1):50-56. PMID: 21979821 DOI:[10.1097/ADM.0b013e318231de51](https://doi.org/10.1097/ADM.0b013e318231de51)

## Challenges Encountered with Patients with OUD<sup>5</sup>

- Altered nociception threshold
- Physical dependence and withdrawal
- Tolerance
- Impaired immune response
- Polysubstance use is common
- Behavioral issues
  - Drug seeking
  - Poor coping skills

Note: *Failure to account for tolerance is a common cause of confrontational behavior when treating patients with addiction.*

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<sup>5</sup> Compton P, Canamar CP, Hillhouse M, Ling W. Hyperalgesia in heroin dependent patients and the effects of opioid substitution therapy. *J Pain* 2012;13(4):401-409. PMID: 22424799  
PMCID:[PMC3334366](https://pubmed.ncbi.nlm.nih.gov/PMC3334366/) DOI:[10.1016/j.jpain.2012.01.001](https://doi.org/10.1016/j.jpain.2012.01.001)

Hay JL, White JM, Bochner F, Somogyi AA, Semple JT, Rounsefell B. Hyperalgesia in opioid-managed chronic pain and opioid-dependent patients. *J Pain* 2009;10(3):316-322. PMID: 19101210  
DOI:[10.1016/j.jpain.2008.10.003](https://doi.org/10.1016/j.jpain.2008.10.003)

Jage J, Bey T, Postoperative analgesia in patients with substance use disorders: Part II. *Acute Pain* 2000;3(4):172-180. [https://doi.org/10.1016/S1366-0071\(00\)80021-2](https://doi.org/10.1016/S1366-0071(00)80021-2)

# Principles of Acute Pain Management in Patients with OUD

## Establish Clear Goals of Care

- Keep the patient safe
- Optimize care (pain and medical treatment)
  - Withholding opioids will not cure addiction
  - Providing opioids will not worsen addiction
- Minimize uncertainty and inconsistency between patient & staff
- Refer interested patients for treatment

## General Principles<sup>6</sup>

- Comprehensive assessment of pain to determine etiology and guide treatment plan
- Clear communication between all team members, including the patient/family about goals and plan of care

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<sup>6</sup> Laroche F, Rostaing S, Aubrun F, Perrot S. Pain management in heroin and cocaine users. *Joint Bone Spine* 2012;79(5). PMID:22405747 DOI:[10.1016/j.jbspin.2012.01.007](https://doi.org/10.1016/j.jbspin.2012.01.007)

Paschkis Z, Potter ML, CE: Acute pain management for inpatients with opioid use disorder. *Am J Nurs* 2015;115(9). PMID:26273927 DOI: [10.1097/01.NAJ.0000471243.30951.92](https://doi.org/10.1097/01.NAJ.0000471243.30951.92)

Quinlan J, Cox F. Acute pain management in patients with drug dependence syndrome. *International Association for the Study of Pain (IASP), Pain Clinical Updates*, April 2017;25(1). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5741366/>

Stromer W, Michaeli K, Sandner-Kiesling A. Perioperative pain therapy in opioid abuse, *Eur J Anaesthesiology* 2013;30(2). PMID: 23241915 DOI:[10.1097/EJA.0b013e32835b822b](https://doi.org/10.1097/EJA.0b013e32835b822b)

- Follow relevant pharmacologic principles
- Understand tolerance issues
- Investigate and clarify problematic behavior and difficulty progressing care
- Consider multidisciplinary consultation (mental health, addiction, pain, social work, spiritual care, etc.)

## Eric's Pain Assessment<sup>7</sup>

The following describes how Eric rated his pain while in the hospital, why he lied about how much pain he felt, when he became more truthful about his pain, and whether his providers thought he was drug seeking.

The video shows Eric seated. His head and shoulders can be seen in the shot. He's wearing a button up shirt and baseball hat. He speaks directly to the viewer.

*“My story is that I started using substances, not a lot of the harder drugs, when I was in my teens. That kind of continued for a few years until eventually when I got into college, when I started using other things like*

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<sup>7</sup> Unidimensional scales (e.g. 0-10) that capture self-reported pain intensity ratings undervalue to the complexity of the pain experience. Pain is a biopsychosocial experience and assessment is a complex social transaction and an exchange of the meaning of pain that demands a more comprehensive approach.

A comprehensive pain assessment includes questions about the onset of pain; its location and whether or not the pain radiates from one place to another; the duration of pain (whether it's constant, intermittent, constant with intermittent flares or breakthrough pain); the quality of pain, including words that help to determine whether the pain is nociceptive (physiologic), neuropathic (pathophysiologic), or of mixed type. Assessment is not complete without determining the impact of pain on the person on their ability to function and perform activities of daily living. Ask about the effect of pain on sleep, appetite, mood, energy, mobility, ability to enjoy life, etc. In the acute care setting, the effects of unrelieved pain also include the inability to turn, cough, deep breathe, ambulate effectively and participate in therapy. Use self-report to assess pain intensity whenever possible. Determine the potential causes of pain, if known. Examples are inflammatory pain, musculoskeletal pain, neuropathic pain etc. Valid and pragmatic assessment of pain is essential for effective pain management.

*methamphetamines for a few years. I think that for me it was an issue because I definitely felt addicted to it immediately.*

*So, I used it every day for a couple years and then when I got tired of that, I started doing heroin on the streets to replace that and it definitely worked, but then I was stuck with a whole new issue, and then eventually it was kind of everything all together.*

*Pretty quickly actually it took me kind of on the streets without any resources or family and support. I've been to treatment centers three or four times in that period. And I wasn't really ready for it at that time I guess even though I thought I wanted it, the addiction was strong enough where I would go back pretty much because I didn't have any real coping skills.*

*The situation that got me in the hospital was I was on the street around Broadway and Capitol Hill in Seattle in the Belltown neighborhoods. I was using heroin on a multi daily basis to the point where it broke down all the vein access I had, so it took me a long time to be able to get the drug into my system. So, I started doing intramuscular injection, which was what gave me the necrotizing fasciitis infection in my leg.*

*It happened in about a day that the necrotizing fasciitis destroyed all the tissue in the right leg. When I went in the hospital I didn't know that I was there because I was put into to a medical coma for about a month. When I woke up all the skin on my leg was gone already. You can guess there was a lot of pain because there was a lot of exposed nerve tissue. The debridement surgeries, I think I had about two dozen in the first month that I was in the coma, so there was a lot of trying to get fight back against the necrosis that was happening. After that I had a bunch more skin grafts when I woke up, and the skin grafts from when I was brought in.*

*I think the skin grafts from the donor sites was the most painful part. This continued for about another month or two because I was in Harborview for about three months. I was on a high amount of pain medications, and it was still pretty ineffective as far as helping with my pain level.”*

## Test Your Knowledge: Pain Assessment

What information is missing in the following pain assessment note?

“Patient reports severe burning pain in the right lower leg during wound care”

*(Chose all that apply)*

1. [Quality](#)
2. [Impact](#)
3. [Site](#)
4. [Severity](#)
5. [Temporal Characteristics](#)
6. [Aggravating & Alleviating Factors](#)
7. [Past Treatment & Response, Patient Preferences](#)
8. [Expectations, Goals, Meaning](#)
9. [Diagnostics, physical exam](#)

## Components of Comprehensive Pain Assessment

The following diagram depicts the components of comprehensive pain assessment, which can be described as follows:

Pain history, medical history, and addiction history, combined with a physical exam, psychosocial history, and mental status history that lead to a pain classification and knowledge of the extent of disease, and related discovery of psychosocial dysfunction and support systems, create the pain diagnosis.

From the pain diagnosis, therapies for the organic component of pain and therapies for the affective and cognitive components of pain and related psychosocial distress can be devised.

## Pain Assessment Mnemonic: QISS-TAPED<sup>8</sup>

Q = Quality

I = Impact

S = Site

S = Severity

T = Temporal Characteristics

A = Aggravating & Alleviating Factors

P = Past Treatment & Response, Patient Preferences

E = Expectations, Goals, Meaning

D = Diagnostics, physical exam

View a version of the QISS-TAPED with examples of potentially useful questions by clicking this link:

[http://www.painmanagementnursing.org/article/S1524-9042\(04\)00103-1/fulltext](http://www.painmanagementnursing.org/article/S1524-9042(04)00103-1/fulltext)

## CAPA<sup>®</sup> Tool

The conversation leads to documentation, not the other way around.<sup>9</sup>

Click the link to view the CAPA tool:

[http://www.painmanagementnursing.org/article/S1524-9042\(17\)30439-3/pdf](http://www.painmanagementnursing.org/article/S1524-9042(17)30439-3/pdf)

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<sup>8</sup> Herr K, Neuropathic pain: a guide to comprehensive assessment. Pain Manage Nurse 2004;5(4 Suppl 1):9-18. PMID:15644855 DOI: [10.1016/j.pmn.2004.10.004](https://doi.org/10.1016/j.pmn.2004.10.004)

<sup>9</sup> Gordon DB, Acute pain assessment tools: let us move beyond simple pain ratings. Curr Opin Anaesthesiol 2015;38(5):PMID: 26237235 DOI: [10.1097/ACO.0000000000000225](https://doi.org/10.1097/ACO.0000000000000225)

## Test Your Knowledge: Difficult Conversations

A patient admitted with history of heroin use is frequently requesting higher doses of IV opioids saying there is no way pain can be controlled using oral medicine. The patient is angry, uncooperative with interviews and says that staff are constantly judging him because his is “a junkie.”

While there is no “right” answer, think about how might you best respond. Below, you’ll find different strategies and suggested phrasing for difficult conversations like these.

<b>Strategy</b>	<b>Suggested Phrasing</b>
Validate patient’s pain and frustration/fear/other emotions.	“I know that you’re in pain and you’re worried. We will do our best for your pain.”
Review the data objectively.	“I see that you are able to function better and sleep better than before.”
Set clear limits when responding to requests for inappropriate intravenous opioids which are not indicated.	“Our standard for all patients is to not give IV medication for people who are able to take pills”  “It is not so important how we get the opioid into your body. What is more important is the right amount at the right time. Though IV may seem stronger it is really only faster but it will also wear off sooner than oral medicine. Oral medicine will give you more steady pain control.”

<p>Use <u>empathy</u>. When patient replies that nothing works except for the IV opioids.</p>	<p>“I’m really sorry you feel that way. This sounds like it is really terrible for you. I understand how it must be difficult to understand why we are saying no to more opioids, but we care about your safety. I know there are ways we can work together so you feel better”</p>
<p>Avoid arguing.</p>	<p>“There is no reason for us to argue about this” or “I am not going to argue with you.”</p>
<p>Do not abandon the patient; commit to treating pain with non-opioid measures.</p>	<p>“I believe that you have pain, and I want to continue to work with you to treat the pain with other approaches”</p>
<p>Use risk/benefit language</p>	<p>“The risks of these medications are higher than the benefits for you”</p>
<p>Be empathetic when it is time to deny or stop opioids</p>	<p>“This must be very difficult for you...In my professional opinion (or medical research does not support), this type of pain medication, it is simply not safe for you in the long run” or “It may seem in the short run that opioids help, but they are not the best approach and can make your pain and problems worse over time”</p>
<p>Respond directly to threats to leave against medical advice</p>	<p>“You have the right to leave the hospital, but I still cannot give you inappropriate medications”</p>

Table 1: Difficult Conversation Strategies and Suggested Phrasing

## Eric's Pain Due to Tolerance

The following describes how opioids were ineffective to control Eric's pain because of his tolerance, why communication was helpful, and why it would have been nice for Eric to have non-pharmacologic options for pain.

The video shows Eric seated. His head and shoulders can be seen in the shot. He's wearing a button up shirt and baseball hat. He speaks directly to the viewer.

*"I definitely remember multiple times a day that people asking me what my pain was on a scale of one to ten. I'd always say a ten. Eventually I'd be more honest with that. You really want the patient to be honest about what their pain is, and you have to take their word for it. You have to implement your plan on what their pain levels are.*

*I know that I just wanted to feel good, and that was kind of an unrealistic expectation at that time. But I really think that providers should still do whatever it takes to make patients feel good. But it was kind of an impossible situation with just pain medication. There are a lot of things that we need to deal with though like the psychosocial aspects.*

*A lot of the other stuff doesn't make your acute pain feel better. So, I'm hoping there's more research done on different pharmaceutical medications that don't have the side effects of addiction. I do remember having the pain scale happen, and I know there are other modalities of assessing that.*

*I don't really remember specifically other things that were happening to me other than that. I don't know if the providers were taking my word for it, or if they thought I was just drug seeking. I know that a lot of people I talk to said that they would get ridiculed by providers who said that they weren't at that level on the pain scale. Whether they were at that level or not, it's hard to try to figure out. It's such a subjective thing, unless we have other indicators of what pain levels are, it's difficult to measure appropriately."*

## Education and Engagement

- Cause of pain
- Methods of pain assessment
- Goals, expectations
- Treatment options
- Rationale for therapy

Lack of knowledge about pain and its treatment can be a major barrier to adequate pain management. Educational interventions have been found to be useful in increasing knowledge, improving patients' involvement in their own care, as well as reducing pain intensity. Patients need to understand goals for pain relief as well as expectations for specific pain treatments. Information and preparation for painful procedures can also help minimize pain. In developing the pain management plan, patient's goals and expectations should be explored. Various pain treatment options should be explained including rationale for therapies. Some patients may be suspicious and reluctant to try nonpharmacologic interventions unless they understand how they work. Potential mechanisms of action of both pharmacologic and nonpharmacologic interventions should be described. Written materials should be provided to support information presented verbally.

## Use a Balanced Rationale Multi-Modal Analgesia<sup>10</sup>

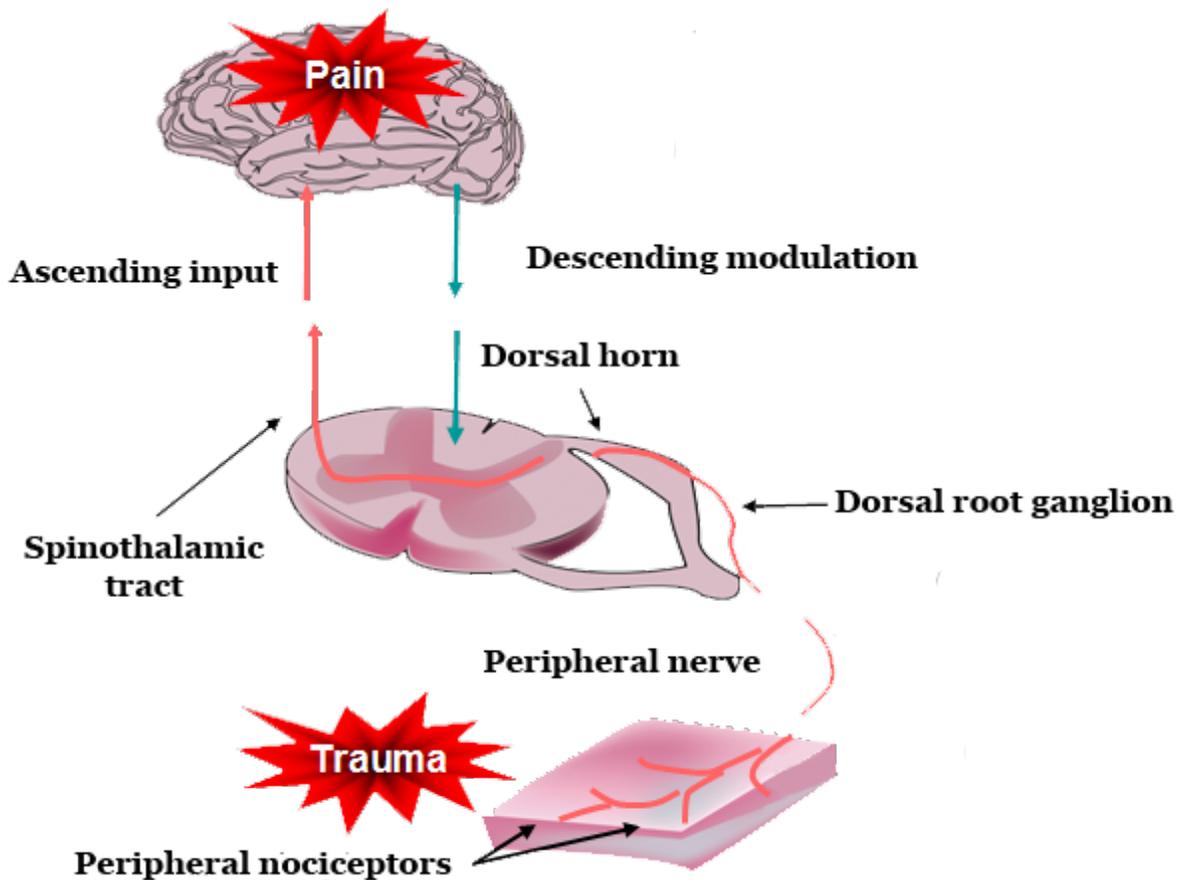


Figure 2: Nociception

It is often necessary to employ a mechanistic approach to drug selection, with less emphasis on therapeutic class stratification and more attention to efficacy related to the underlying cause. This may allow for rational “multimodal” selection of therapeutic agents and improved patient outcomes.

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<sup>10</sup> Chou R, Gordon DB, De Leion-Casasola OA, et al. Management of Postoperative Pain: A Clinical Practice Guideline From the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain*. 2016 Feb;17(2):131-57. PMID: 26827847 DOI: 10.1016/j.jpain.2015.12.008

Kehlet H, Dahl JB. The value of “multimodal” or “balanced analgesia” in postoperative pain treatment. *Anesth Analg*. 1993;77:1048-1056. PMID:8105724

Opioids, tramadol, tricyclic antidepressants, selective serotonin reuptake inhibitors, and serotonin-norepinephrine reuptake inhibitors can enhance the descending inhibitory pathways from the brain

Opioids activate receptors that result in reducing the release of neurotransmitters (e.g., norepinephrine, glutamate, serotonin, substance P, acetylcholine)

Some antidepressants inhibit reuptake of biogenic amines (e.g., norepinephrine, serotonin). Tricyclic antidepressants are strong sodium-channel modulators

Two groups of agents modulate central sensitization at the spinal cord:

Drugs that inhibit calcium flux, such as anticonvulsants

Drugs that affect N-methyl-D-aspartate (NMDA) receptors. This second group contains agents whose primary indications are unrelated. These drugs modulate central sensitization via effects on NMDA receptors and are still under study for analgesic use<sup>11</sup>

Drugs that modulate peripheral sensitization by inactivating voltage-dependent sodium channels include carbamazepine, oxcarbazepine, topiramate, and lidocaine. Gabapentin inhibits Ca<sup>++</sup> channel current in a voltage-dependent manner. Capsaicin acts at vanilloid receptors, causing initial short-term receptor activation followed by long-term Ca<sup>++</sup>-dependent desensitization.

### *Acetaminophen (APAP)*

- Analgesic, antipyretic, not an anti-inflammatory
- Few if any side effects at therapeutic doses
- Hepatotoxic at high dose
- Use caution with opioid combination drugs
- Alcoholics at special risk
- Uncertainty about risk of “analgesic nephropathy” with long-term use, especially if used in combination with aspirin or other NSAIDs

Acetaminophen is equivalent to aspirin as an analgesic and antipyretic, but it lacks anti-inflammatory properties. The conventional oral dose is 650-1000 mg. Its advantage in the treatment of mild to moderate pain is that it has few if any side effects at therapeutic doses. The danger of the drug is that at high doses it (well really its metabolite) is toxic to the liver and can cause fatal hepatic necrosis. Nurses must be alert to the many drugs that contain APAP: cold remedies, sleep aids, and especially combination analgesics with opioids. Patients with alcohol use disorder or hepatitis C are at special risk of acetaminophen hepatotoxicity because chronic use of alcohol results in increases in the enzyme that converts it to the toxic metabolite. The FDA issued new warnings<sup>11</sup> on pain relievers in December 2006: persons who consume more than 2-3 alcoholic drinks per day and those with hepatitis C should not take more than 2g in 24 hours.

Chronic use of acetaminophen (or aspirin for that matter) has been linked to chronic renal failure. Unfortunately, the risk has not been clearly defined. There are no data to indicate the dose level and duration of use that increase the risk of irreversible kidney damage.

### *Nonsteroidal Anti-inflammatory Drugs (NSAIDs)*

- Anti-inflammatory, antipyretic and analgesic effects
- NSAIDs should be utilized in the multimodal management of acute pain unless otherwise contraindicated
- Principle mechanism of action is inhibition of prostaglandin synthesis
- Side effects depend partly on whether drugs are selective (COX-2) or nonselective
  - Impaired hemostasis (nonselective)
  - GI irritation/bleeding (nonselective)
  - Cardiovascular risk
  - Renal toxicity

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<sup>11</sup> U.S. Food and Drug Administration. (2006). *FDA Proposes Labeling Changes to Over-the-Counter Pain Relievers*. Retrieved 2007, August 31, updated link June 18, 2019, from <https://www.fda.gov/drugs/bioterrorism-and-drug-preparedness/use-caution-pain-relievers>

## *Gabapentin (Neurontin®) and Pregabalin (Lyrica®)*<sup>12</sup>

- Blocks  $\alpha_2\delta$  subunit of voltage-dependent calcium channel; reduce influx of  $Ca^{2+}$ , less glutamate released from nerve endings
- Not metabolized, few drug interactions, monitor kidney function
- Sedation common; ataxia, peripheral edema, dizziness, diplopia, nausea
- Role in managing postop pain
- Significant antianxiety effects

These calcium channel modulators are the anti-epileptics with the best evidence of efficacy. They bind to the alpha 2 delta subunit of the calcium channel. Advantages: lack of drug interactions; disadvantage need for 3 daily doses.

To decrease side effects, start gabapentin at 100 to 300 mg in a single dose at bedtime or 100-300 mg 3 times a day and titrate by 100-300 mg every 1-7 days as tolerated; between 1800 and 3600 mg/day is usually needed. There are reports of higher dose requirements, but keep in mind that 4800 mg is the gut's maximum absorption capacity. Allow 3-6 weeks for titration, 1-2 weeks at maximum tolerated dose.

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<sup>12</sup> Buvanendra, A, Kroin JS, Della Valle CJ, Kari M, Moric M, Tuman KJ. Perioperative oral pregabalin reduces chronic pain after total knee arthroplasty: a prospective, randomized, controlled trial. *Pain Medicine* 2010;110(1):199-207. PMID:19910619 DOI:[10.1213/ANE.0b013e3181c4273a](https://doi.org/10.1213/ANE.0b013e3181c4273a)

Eipe N, Penning J, Yazdi F, Mallick R, Turner L, Ahmadzai N, Ansari MT, Perioperative use of pregabalin for acute pain-a systematic review and metanalysis. *Pain* 2015 156(7):1284-1300. PMID: 25830925 DOI: [10.1097/j.pain.000000000000173](https://doi.org/10.1097/j.pain.000000000000173)

Singla NK, Chelly JE, Lionberger DR, Gimbel J, Sanin L, Sporn J, Yang R, Cheung R, Knapp L, Parsons B. Pregabalin for the treatment of postoperative pain: results from three controlled trials using different surgical models. *J Pain Res* 2014; 8:9-20. PMID:25565885 PMCID:[PMC4278776](https://pubmed.ncbi.nlm.nih.gov/PMC4278776/) DOI: [10.2147/JPR.S67841](https://doi.org/10.2147/JPR.S67841)

Tippana EM, Hamunen K, Kontinen VK, Kalso E. Do surgical patients benefit from perioperative gabapentin/pregabalin? A systematic review of efficacy and safety. *Anesth & Analg* 2007;104(6):1545-1556. PMID:17513656 DOI:[10.1213/01.ane.0000261517.27532.80](https://doi.org/10.1213/01.ane.0000261517.27532.80)

The dose range for pregabalin is 100 –200 mg three times a day. Start with 100 mg; can titrate to 600 mg in 6 days; often see improvement within a week. Dizziness and somnolence may occur. Provides pain control, improves sleep.

Both gabapentin and pregabalin have antianxiety effects. Pregabalin is a Schedule V controlled substance.

### *Ketamine*<sup>13</sup>

- N-methyl-D-aspartate (NMDA) antagonist that can inhibit induction and maintenance of central sensitization (“wind-up”) after painful stimuli
- Often used intraoperatively as part of a balanced multimodal approach to pain control.
- May be particularly useful for patients who are opioid tolerant.
- Has been shown to have an opioid-sparing effect during the first postoperative days.
  - Pain Reduction (rest 0.6-1.3cm; mobilization 0.4-0.5)
  - Analgesic sparing (5-20mg)
  - Risk reduction PONV (NNT 11)
- Most common side effects include dysphoria, hallucinations, visual changes

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<sup>13</sup> Snijdelaar DG, Cornelisse HB, Schmid RL, Katz J. A randomized, controlled study peri-operative low dose s(+)-ketamine in combination with postoperative patient-controlled s(+)-ketamine and morphine after radical prostatectomy. *Anaesthesia* 2004;59(3):222-228. PMID:14984518

Unlugenc H, Ozalevli M, Guler T, Isik G, Postoperative pain management with intravenous patient-controlled morphine: comparison of the effect of adding magnesium or ketamine *European Journal of Anaesthesiology* 2003;20:416-21. PMID:12790216

Wang L, Johnston B, Kaushal A, Cheng D, Zhu F, Martin J, Ketamine added to morphine or hydromorphone patient-controlled analgesia for acute postoperative pain in adults: a systematic review and meta-analysis of randomized trials. *Canadian Journal Anaesthesia* 2016;63(3):311-325. PMID:26659198 DOI:[10.1007/s12630-015-0551-4](https://doi.org/10.1007/s12630-015-0551-4)

### *Local Anesthetics*

- Modulate sodium channels
- When administered peripherally, may produce differential—also known as sensory—block
  - Interrupts some nerve conduction, but leaves motor function unaffected
  - Some nerves are more readily blocked than others, depending on size and myelination
- Epidurally, interrupts pain input at the nerve roots
- Associated with few side effects

### *Adjuvant Medications*

- Drugs with primary applications other than pain management
- Some are effective in certain painful conditions
- Drugs for neuropathic pain
  - Antidepressants
  - Anticonvulsants
  - Local Anesthetics
  - Alpha2 adrenergic agonists
  - NMDA receptor antagonists
- Corticosteroids and others
- Muscle relaxants
- Hypnotics and anxiolytics

## Test Your Knowledge: Multimodal Analgesia

Which of the following best explains the rationale for providing a multimodal analgesic regimen?

1. [Combining medications with different mechanisms of action results in superior pain control and may lessen the doses needed to control pain.](#)
2. [Combining medications with different routes of administration provides more flexibility to meet a patient's acute pain needs.](#)
3. [When used alone opioids are insufficient to control pain, particularly in a person with opioid use disorder who is usually opioid tolerant.](#)

## Pain, Sleep, and Trust

The following describes how withdrawal affected Eric's pain and sleep, his frustration with certain healthcare providers, and why you need to "humanize" patients.

The video shows Eric seated. His head and shoulders can be seen in the shot. He's wearing a button up shirt and baseball hat. He speaks directly to the viewer.

*"Harbor View I definitely think of as a very amazing organization and I owe my life to them and I even worked in the same unit for a couple of months that I was patient in and the burn unit and that was amazing. I'm definitely more comfortable being out on the front lines for people experiencing the stuff on the streets in the community health aspect. We need more people doing that.*

*Motivation and want and desire to be trustworthy towards people was primarily when I was going through so much pain every night I wouldn't go to sleep until maybe like 5 or 6 in the morning because I've been going through pain all night since I was still going through withdrawals even after all those medications. Plus, I had the restless leg thing still happening, which made it really uncomfortable to sleep. So, I'd finally get to sleep at like 5:30 in the morning. The providers would come in at 6am. There'd be 12 people coming in the room, with the residents and nurses*

*and social workers. They'd come in and turn on the lights and wake me up. I was really frustrated about that.*

*Some providers would come in and introduce me to people individually. They'd talk to me like a person. But there be some people that would just go in there, turn on the lights, turn their back to me, start talking, never even ever say one word with me the whole time they're in there. That made me feel like a subject rather than in patient. That's very demeaning in a way. I don't know that was my perception or not, but I was already in a very aggravated state because of my own pain that I was dealing with.*

*Feeling like a ghost didn't really help the situation, and probably didn't help my pain management either. It's better to feel less stressed. In a hospital, less stress helps you feel better, so you get better the outcomes. It would have been better for the patients and it would have been a lot less work for the providers just to take that extra couple minutes and to humanize people.*

*For providers to connect with the patient when they're doing their daily rounds and bring them into the discussion helps a lot. Instead of having a closed circle of providers that excludes the patient, open it up and include them instead.”*

## **Non-Pharmacologic Strategies**

Purpose is to augment pharmacologic therapy, not replace it:

- Basic comfort measures
- Physical techniques provide comfort, correct physical dysfunction, and alter physiologic responses
- Behavioral strategies help patients understand pain, alter pain behavior, coping skills and change perception of pain

### *Benefits of Non-Pharmacologic Strategies*

- Reduced anxiety
- Improved mood
- Increased sense of control over pain
- Improved sleep
- Decreased fatigue
- Improved function
- Restored hope
- Improved quality of life

There is moderate quality evidence to recommend the use of physical and cognitive-behavioral interventions for acute pain management. Some patients may experience a reduction in pain intensity with a nonpharmacologic intervention while others may not. Regardless of their effects on pain intensity, nonpharmacologic interventions provide a variety of other beneficial effects that can positively impact pain-related outcomes. Nonpharmacologic interventions have been shown to reduce anxiety, improve mood, increase personal sense of control over pain, improve sleep, decrease fatigue, improve functional status, restore hope, and enhance quality of life.

### *Selecting Non-Pharmacologic Treatments*

- Previous experiences and expectations for outcome
- Patient preferences and coping styles
- Type and intensity of pain
- Physical and cognitive abilities
- Concurrent symptoms
- Involvement of friends / family

Previous experiences with nondrug interventions may influence how well patients expect the treatment to work and whether or not they are willing to use them again. Patients may also have preferences for specific nonpharmacologic interventions based on their personal coping style. The clinician may ask the patient what strategies they have used to control pain in the past, how they usually cope with pain, and what nonpharmacologic

interventions they found useful for pain or other symptoms in the past. Cultural or religious preferences may influence which nonpharmacologic interventions patients are willing to use. Type of pain should also be considered. Well-localized pain may be suitable for cutaneous stimulation interventions such as TENS or massage to a specific body area, whereas diffuse widespread pain may be better treated with a cognitive or behavioral strategy. Cutaneous stimulation interventions can be used for any level of pain, however cognitive interventions may be too difficult to use if pain is severe. Physical or cognitive abilities will determine what types of nonpharmacologic interventions patients are capable of using or which they are particularly well suited to use. For example, imaging ability – the ability to create vivid mental images and experience them as if they were real – has been found to be related to success in achieving pain relief with guided imagery interventions. Concurrent symptoms, which can interfere with one's capacity to focus on a cognitive intervention, should also be considered. If family or friends are available and willing to participate, they may be able to help patients implement nonpharmacologic interventions, such as guiding an imagery exercise or providing massage.

### *Physical Modalities*

- Basic comfort measures (lighting, noise, temperature, pacing/rest, supportive devices)
- Applications of heat and cold
- Massage
- Exercise
- Physical Therapy
- Transcutaneous electrical nerve stimulation

## *Cognitive-Behavioral Therapies*

- Education/instruction
- Distraction
- Imagery
- Music
- Relaxation
- Meditation and mindfulness
- Cognitive-behavioral psychotherapy
- Biofeedback

## *Transcutaneous Electrical Nerve Stimulation (TENS) for Acute Pain<sup>14</sup>*

- There are more than 41 randomized controlled trials using TENS in acute postoperative pain demonstrating benefit.
  - Studies include patients with thoracic/cardiac, abdominal/pelvic, knee, spine hip, hernia, or mixed types of surgeries
- Pooled reduction of 36% in postoperative analgesic use compared with sham (p = 0.005)
- A few studies reported decreased pain intensity
- Effects stronger with “optimal” settings and used prn with activities

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<sup>14</sup> Beckwee D, Bautmans I, Swinnen E, Yermey Y, Lefeber N, Lievens P, Vaes P. A systematic review investigating the relationship between efficacy and stimulation parameters when using transcutaneous electrical nerve stimulation after knee arthroplasty. *SAGE Open Med* 2014; Jun 16;2:2050312114539318. doi: 10.1177/2050312114539318. eCollection 2014. PMID:26770730 PMCID:[PMC4607225](#) DOI:[10.1177/2050312114539318](#)

Bjordal JM, Johnson MI, Ljunggreen AE. Transcutaneous electrical nerve stimulation (TENS) can reduce postoperative analgesic consumption. A meta-analysis with assessment of optimal treatment parameters for postoperative pain. *Eur J Pain* 2003;7(2):181-188. PMID:12600800 DOI:[10.1016/S1090-3801\(02\)00098-8](#)

Freyne A, Falcoz PE. Is transcutaneous electrical nerve stimulation effective in relieving postoperative pain after thoracotomy? *Interact Cardiovasc Thorac Surg* 2010;10(2):283-288. PMID:19910359 DOI:[10.1510/icvts.2009.219576](#)

## Test Your Knowledge: Appropriate Responses

When offering a patient with a history of prescription opioid use disorder music to help distract during a painful dressing change and to help review/practice deep breathing exercises beforehand he/she says, “You think my pain is all in my head, my pain is excruciating, I don’t understand why you just can’t give me more pain medicine.”

Which of the following would be most appropriate response?

1. [Continually increasing your opioid is unsafe](#)
2. [Music and deep breathing work better if you use them together.](#)
3. [There is scientific evidence that using non-medicine strategies can help control pain.](#)

## Summary of General Principles for Acute Pain Management for Patients with the Disease of Addiction

- Team approach with case conferences
- Set realistic goals for pain and addiction treatment
- Treat depression and comorbid psychiatric problems
- If possible, treat the cause of the pain
- Incorporate nondrug methods of pain control
- Maximize nonopioids and adjuvants
- Use oral opioids when possible
- Minimize PRN IV doses unless necessary
- Consider tolerance - patients with opioid use disorder usually require higher doses

The team approach with ongoing case conferences is the foundation of managing pain in patients with the disease of addiction. The history of addiction should be openly discussed. Everyone involved with the patient’s care should understand the treatment plan and goals. Principles of pain management in the presence of addictive disease involve the use of multimodal therapy including nonopioid and nondrug interventions. When parenteral is needed, IV PCA may be best. Be alert to other contributors to behavior and stress such as depression and anxiety. Patients with addictive

disease or prior substance abuse may have tolerance and require high doses of opioids to control pain.

# Communication and Care Planning

## General Principles<sup>15</sup>

- Comprehensive assessment of pain
- Clear communication between all team members, including the patient/family
- Follow relevant pharmacologic principles
- Understand tolerance issues
- Investigate and clarify problematic behavior and difficulty progressing care
- Consider multidisciplinary consultation (mental health, addiction, pain, social work, spiritual care, etc.)

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<sup>15</sup> Laroche F, Rostaing S, Aubrun F, Perrot S. Pain management in heroin and cocaine users. *Joint Bone Spine* 2012;79(5). PMID:22405747 DOI:[10.1016/j.jbspin.2012.01.007](https://doi.org/10.1016/j.jbspin.2012.01.007)

Paschkis Z, Potter ML, CE: Acute pain management for inpatients with opioid use disorder. *Am J Nurs* 2015;115(9). PMID:26273927 DOI: [10.1097/01.NAJ.0000471243.30951.92](https://doi.org/10.1097/01.NAJ.0000471243.30951.92)

Stromer W, Michaeli K, Sandner-Kiesling A. Perioperative pain therapy in opioid abuse, *Eur J Anaesthesiol* 2013;30(2). PMID: 23241915 DOI:[10.1097/EJA.0b013e32835b822b](https://doi.org/10.1097/EJA.0b013e32835b822b)

## Interdisciplinary Team

Pain management in patients with the disease of addiction begins with an interdisciplinary team approach. The team can address the multiple needs and problems that can occur while managing such a patient. Verifying patient behaviors with other team members is helpful for assessing aberrancy. Team discussion can be used to individualize treatment plans, establish limit-setting and help staff understand behaviors they may view as manipulative. Conflict with staff may be lessened if there is a general understanding of realistic goals.

## Consistency and Communication

- Don't make promises you can't keep!
- Commit to care for patient's pain
- Decide to use multiple therapies besides opioids
- Assure adequate dosing
- Empathize with clear limit setting (depersonalize)
- Adopt and convey non-judgmental attitude
- Gather a care conference (may be needed several times a day)

## Screening for Substance Use<sup>16</sup>

- Ask permission to discuss this sensitive topic
  - *"Can I ask you some questions about your substance use?"*
- Be specific and detailed
  - *"What do you use? - cocaine, meth, heroin, pills?"*
- How much and how often?
  - *"When did you last use?"*
- Ask about withdrawal symptoms
  - *"What symptoms do you usually feel when in withdrawal?"*

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<sup>16</sup> Kilbourne AM, Salloum I, Dausey D, Cornelius JR, Conigliaro J, Xu X, Pincus HA. Quality of care for substance use disorders in patients with serious mental illness. J Subst Abuse Treat. 2006;30(1):73-7. PMID: 16377454 DOI: [10.1016/j.jsat.2005.10.003](https://doi.org/10.1016/j.jsat.2005.10.003)

Review the National Institute on Drug Abuse (NIDA) chart of evidence-based screening tools (AUDIT-C, ORT, CAGE-AID, etc), by clicking this link: <https://www.drugabuse.gov/nidamed-medical-health-professionals/tool-resources-your-practice/screening-assessment-drug-testing-resources/chart-evidence-based-screening-tools-adults>

Review how to improve provider skills in reducing the risk of opioid therapy (tools and stratification algorithms) by clicking this link: <https://www.cdc.gov/drugoverdose/training/reducingrisk/accessible/index.html>

## Understanding the Experience of Addiction

- Substance use may start as a choice, but addiction leads to loss of control
- Patients use substances to relieve distress and feel “normal”
- Affects all life roles and relationships, including medical encounters
- Patients may not be seeking treatment for addiction, complicating relationships with providers, who clearly see negative consequences.
- Can result in mutual mistrust<sup>17</sup>

## Getting an Addiction History

- Establish rapport – listen to the story
- Use open ended questions in non-judgmental fashion
  - A patient may feel shame, guilt and fear (fear of pain and withdrawal)
- Ask about past use – it is less threatening
- Assess past problems and treatment attempts
- Listen for and reflect concerns about bias, stigma, problems with medical care
- Listen for a “recovery story”

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<sup>17</sup> Merrill JO JGIM 2002 Mutual Mistrust

## Eric's Hospital Experience

The following describes why Eric's hospital experience was "unwilling," why he felt "ashamed and guilty," and why pain control efforts were ineffective.

The video shows Eric seated. His head and shoulders can be seen in the shot. He's wearing a button up shirt and baseball hat. He speaks directly to the viewer.

*"So, my experience in the hospital was definitely an unwilling experience. I woke up there after I was in a coma for a month, with this excruciating amount of pain. I had a lot of guilt and shame about that because I knew finally why I was in the hospital. I had been lucky enough to not get any soft tissue infections or abscesses from my drug use in the past, but obviously, this was the mother of all abscesses in a way. So, it hit me pretty dramatically. I had a huge wake up because of that.*

*A lot of people use drugs despite the negative consequences. That's one of the criteria of addiction, that you're using despite all the negative consequences. It's a really baffling thing that feels like a part of survival, where you need to have this in your life to be normal. For me, I had such a high tolerance, because at that time I was using three or four grams of heroin a day, which costs a couple hundred dollars a day. At that time, the heroin in Seattle was cut with some pretty dirty stuff, so it wasn't the purest substance like it is today. Today it's a lot better than it used to be.*

*In the hospital, they told me I was getting the most pain medication I could legally for a person. And it was still pretty ineffective, because I was getting a full-on dressing change on my leg, which was completely exposed muscle and nerve tissue. So, every twelve hours it was getting changed. It's like getting a band-aid ripped off, but you feel it with your whole leg. They told me I was going through the equivalent of childbirth every day. And I was in that soundproof room in the burn unit where they have you on the metal bed. They'd wash me down and scrub me, while I screamed and hit the metal bed with my knuckles until they were bloody. I was somehow able to get through it. It felt like Purgatory because of my tolerance level. Before the procedure, they'd give me a couple doses of morphine, I'd have the two fentanyl lollipops, and I was already on the*

*baseline oxycodone and dilaudid, and I was given oral methadone. That was still hugely ineffective at controlling the pain because of the tolerance level I had.*

*When I was sent home from the hospital, still with open wounds, I had to do my own dressing changes. I still had to wash it off in the shower and get it as clean as possible. I still had oxycodone, morphine, and methadone as well. I was weaning off the methadone until I was at about five milligrams a day. It was manageable because I did it slowly.*

*I wasn't really sent home with any kind of treatment plan or social support plans. So, after my medication ran out, I went back to using heroin off the street again. I went right back down to downtown Seattle where I was doing it before and picked up the habit again for a couple months.*

*It seems psychotic, but even though I wanted to get away from doing heroin, I didn't have anything to replace it with. So, it was a blank space in my head where I had this desire to change and I'd made this decision, but then five minutes later my head got me into a space where it didn't matter and I was going to go back to doing what I always did anyway. I feel like there was no amount of willpower that would have been able to get me to stop.*

*So, within the hospital system I had a lot of people who'd be willing to sit down with me and look me in the face and treat me like a human. Those were all really good situations. Like my occupational therapist, who helped me learn how to walk again, she was fabulous. There were other things that helped with my comfort in the hospital and also pain management. Some people helped with expectations and what was going to happen in the future. Others wouldn't write their names on the whiteboard. So, for the entire day I wouldn't know who my nurse was. I was completely dependent on people for everything because I had double catheters and I couldn't walk because my legs were completely atrophied. It was simple things like that, like knowing what was going to be happening that was the most useful because I could expect that I was going to be in pain or not.*

*So, the only pain relief method that was done for me that I accepted was the pharmaceutical, which is exactly what got me into the hospital to begin with. It would've been nice to have some other options to use aside from that. I don't know if I'd have used it or not, but it would've been useful to get more one on one support in that way, like for meditation.”*

### Assess Stage of Readiness to Change<sup>18</sup>

- No problem and/or no interest in change (*Precontemplation*)
- Might be a problem; might consider change (*Contemplation*)
- Definitely a problem; getting ready to change (*Preparation*)
- Actively working on changing, even if slowly (*Action*)
- Has achieved stability, is trying to maintain (*Maintenance*)

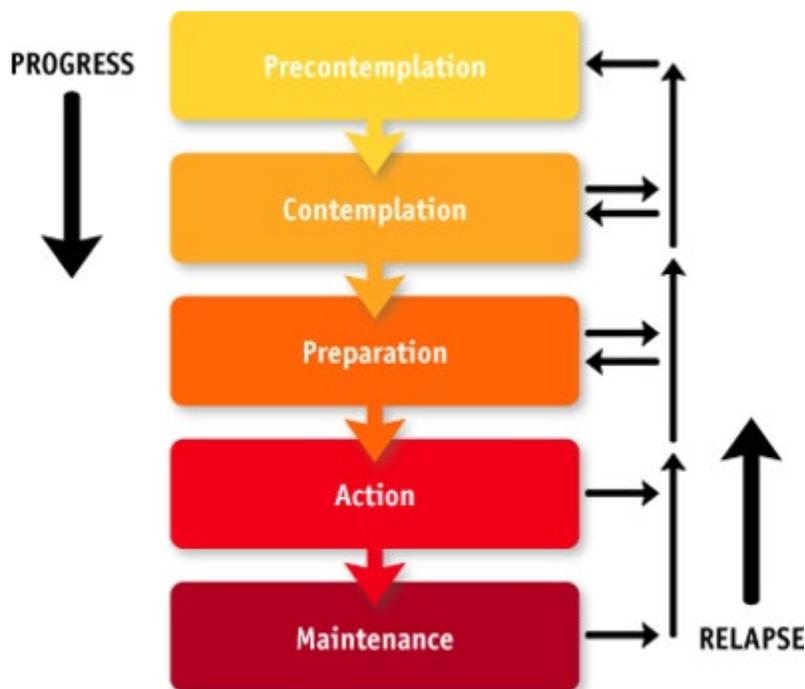


Figure 3: Stages of Readiness to Change. Source: <http://www.adultmeducation.com/facilitatingbehaviorchange.html>

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<sup>18</sup> DiClemente, C. C. , & Prochaska, J. O. (1998). Toward a comprehensive, transtheoretical model of change: Stages of change and addictive behaviors. In W. R. Miller & N. Heather (Eds.), *Treating addictive behaviors* (2nd ed., pp. 3-24). New York: Plenum.

## Using Opioids for Acute Pain in Patients with OUD<sup>19</sup>

- High doses of opioids might be necessary due to tolerance
- Respect tolerance but don't let it drive dosing
  - Opioid tolerant may need 2-3X usual doses
- Short-acting opioids are platform for acute pain
- A schedule may be beneficial for all involved
- Oral preferred; if parenteral is needed, consider using IV PCA
  - Avoid prn RN boluses
  - Can set lockouts to 90 minutes
- Disentangle from non-opioids

## Addiction Maintenance Therapy<sup>20</sup>

- Methadone and buprenorphine are used in addiction maintenance programs to prevent craving
- Methadone maintenance therapy can only be provided by Opioid Treatment Programs certified by the federal government
- Buprenorphine is approved for in-office treatment of opioid dependence

Methadone maintenance programs, available since the 1960s, have been found to reduce heroin use and the crime, death and disease associated with abuse of the drug. Methadone reduces craving and suppresses withdrawal symptoms. When used to treat pain, it is usually dosed every 6-8 hours, whereas when used in addiction maintenance programs, it is dosed

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<sup>19</sup> Carroll IR, Angst MS, Clark JD. Management of perioperative pain in patients chronically consuming opioids. *Reg Anesth Pain Manag* 2004;29(6):576-591. PMID:15635517

Richebe P, Beaulieu P. Perioperative pain management in the patient treated with opioids: continuing professional development, *Can J Anesth* 2009;56(12):969-81. PMID:19888637 DOI:[10.1007/s12630-009-9202-y](https://doi.org/10.1007/s12630-009-9202-y)

Shah S, Kapoor S, Durkin B. Analgesic management of acute pain in the opioid-tolerant patient. *Curr Opin Anaesthesiol* 2015;28(4):398-402. PMID:26107026 DOI:[10.1097/ACO.0000000000000218](https://doi.org/10.1097/ACO.0000000000000218)

<sup>20</sup> Bonhomme J, Shim RS, Gooden R, Tyus D, Rust G. Opioid addiction and abuse in primary care practice: a comparison of methadone and buprenorphine as treatment options. *J Natl Med Assoc* 2012;104(7-8):342-350. PMID: 23092049 PMCID: [PMC4039205](https://pubmed.ncbi.nlm.nih.gov/PMC4039205/)

once a day. Outpatient maintenance treatment can only be provided by Opioid Treatment Programs (OTPs) certified by the Substance Abuse and Mental Health Services Administration and registered by the DEA. OTPs should also provide a comprehensive range of medical care, drug and health education and counseling.

Buprenorphine offers an alternative to methadone and is subject to fewer prescribing restrictions. This Schedule III drug was approved for in-office treatment of opioid dependence under the Federal Drug Addiction Treatment Act of 2002. Buprenorphine may be prescribed by any physician who has received training (available via the internet or as a one-day course) and receives an additional prescribing number from the DEA. Buprenorphine is available in sublingual tablets both alone and with naloxone.

Individuals in either treatment program are at risk for inadequate pain control, but for different reasons. Clinicians may fail to recognize that patients in OTPs may have developed significant tolerance and require “larger than expected” doses of opioid to control pain. The challenge with buprenorphine is that it acts as an antagonist at high doses and thus could block the analgesic effect of an opioid agonist such as morphine or hydromorphone.

## *Methadone*<sup>21</sup>

- Patients who are admitted on methadone dispensed from addiction treatment centers should continue to receive the same daily dose while in the hospital
- Once daily methadone for addiction treatment will not treat acute pain
- Methadone has an unpredictable long half-life and should not be increased or added to treat acute pain
- Consult an addiction or pain specialist for advice and regulations.

## *Buprenorphine: A Partial Agonist*<sup>22</sup>

- Used for analgesia or office based maintenance therapy with special license
- Can be used for pain control. Variable analgesic effect
- Binds very tightly to m-receptor; high dose blocks effect of pure agonists
- Can precipitate opioid withdrawal due to partial agonist effect
- Limited respiratory depression risk, so safer than full agonists
- Less risk of prolonging the QT interval than methadone

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<sup>21</sup> Noska A, Mohan A, Wakeman S, Rich J, Boutwell A. Managing opioid use disorder during and after acute hospitalization: a case-based review clarifying methadone regulation for acute care settings. *J Addict Behav Ther Rehabil* 2015;4(2):PMID: 26258153 PMCID: [PMC4527170](#) DOI: [10.4172/2324-9005.1000138](#)

Shanahan C, Beers D, Alford DP, Brigandi E, Samet JH, A transitional opioid program to engage hospitalized drug users. *J Gen Intern Med* 2010;25(8):803-808. PMID:20237960 PMCID:[PMC2896583](#) DOI:[10.1007/s11606-010-1311-3](#)

<sup>22</sup> Alford DP, Compton P, Samet JH. Acute pain management for patients receiving maintenance methadone or buprenorphine therapy. *Ann Intern Med* 2006;144(2):127-134. PMID:16418412 PMCID: [PMC1892816](#)

Bonhomme J, Shim RS, Gooden R, Tyus D, Rust G. Opioid addiction and abuse in primary care practice: a comparison of methadone and buprenorphine as treatment options. *J Natl Med Assoc* 2012;104(7-8):342-350. PMID:23092049 PMCID:[PMC4039205](#)

Bryson EO The perioperative management of patients maintained on medications used to manage opioid addiction. *Curr Opin Anesthesiol* 2014;27:359-364. PMID: 24500338 DOI:[10.1097/ACO.000000000000052](#)

## Substance Use in Hospital

What should you do if a patient could be using while in the hospital?

- Document and communicate aberrancies
- Move forward with prompt, clear, definitive response
- Hold opioids until intoxication signs have resolved and UDT obtained
- Change opioids to low diversion potential form (e.g. oral solution)
- Review and document
- Inform the patient of risk and consequences
- Advise others involved in patient's care
- Ensure withdrawal symptoms have been adequately addressed

## Eric's Relapse

The following describes why the inpatient program for rehabilitation from substance use wasn't for Eric, how he relapsed after his hospital admission, and why he needed to be ready for treatment.

The video shows Eric seated. His head and shoulders can be seen in the shot. He's wearing a button up shirt and baseball hat. He speaks directly to the viewer.

*“So, in the inpatient treatment center, well, I've been to a few when I was a teenager and another one when I was in my 20s. For me an inpatient treatment center is kind of in my opinion something people go to when they have a drug and alcohol issue. For a lot of people that's a totally doable thing, but there are a lot of barriers with that. I was privileged enough to be able to get into that and have the resources that go along with that.*

*When I got there, I thought that just going to the inpatient treatment center would be enough for me to be fine getting out, but I don't really consider that things like addiction and substance use disorders is an anxiety thing with me. I can't cope with life normally in certain situations or that I have this kind of void in myself that doesn't go away even when*

*I'm not on drugs. I have him it with something meaningful in my life to get away from life is great.*

*But inpatient treatment centers aren't for everybody, and that's how it was with me. Even when I got out of the hospital, I owed hundreds of thousands in medical bills. Plus, with all the skin grafts and surgeries the pain meds prescribed to me, combined with a bunch of other stuff after my hospital stay, I didn't really have a plan. So, I relapsed again after getting out of the hospital for another month or two.*

*Eventually it didn't take another inpatient treatment center to get off of drugs. I started doing a more normal thing with social support systems in place and got through it.*

*I think the inpatient treatment center is good for people who don't have the knowledge or resources to know how addiction works and to be able to look at it in a medical way rather than a moral failing. A lot of people think they're just bad people and can't get it right. Other people in the community think that drug users are just bad people that are choosing to do this. But when you look at it in the medical and physiological perspective, you can understand why people do it. For those reasons, inpatient treatment centers can be really useful. Even then, inpatient treatment centers have success rates in the low single digits. It can't be the only thing that people are doing. Most people I know have been there numerous times like I have.*

*So, I definitely think inpatient treatment centers were useful for me, but I don't think it's crucial to get off of drugs. You don't have to go to an inpatient treatment center to do that. But if you have those resources and the privilege to do that, it's a good option. I think there are a lot of other things in the interim for people who can't do that to be able to start dealing with their substance use disorder on their terms. When I was forced to go to inpatient treatment centers, people would tell me I had a problem. I was dependent on other people for my wellbeing, and they forced me to go into inpatient treatment. But when my mindset was that I was forced to go, I was ambivalent towards it and didn't really want to do it because I was still getting a lot of positive benefits from the drug use.*

*There were negative aspects too, but for some reason when I was forced into inpatient treatment, it was usually not during the same period when I was ready to do it, and I think it's crucial for someone to be in the place in their mind where they want to do it.”*

## Care Coordination at Hospital Discharge<sup>23</sup>

- Early discharge planning is crucial to identify transition plan, particularly for patients planning to engage with on-going addiction treatment
- It is illegal for inpatient provider to provide methadone for opioid use disorder (maintenance therapy) at discharge.
  - An exception known as the "three-day rule"
    - Title 21, Code of Federal Regulations, Part 1306.07(b)), allows a practitioner who is not separately registered as a narcotic treatment program, to administer (but not prescribe) narcotic drugs to a patient for the purpose of relieving acute withdrawal symptoms while arranging for the patient's referral for treatment
  - Not more than one day's medication may be administered to a patient at one time
  - This treatment may not be carried out for more than 72 hours

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<sup>23</sup> Noska A, Mohan A, Wakeman S, Rich J, Boutwell A. Managing opioid use disorder during and after acute hospitalization: a case-based review clarifying methadone regulation for acute care settings. *J Addict Behav Ther Rehabil* 2015;4(2):PMID: 26258153 PMCID: [PMC4527170](#) DOI: [10.4172/2324-9005.1000138](#)

Shanahan C, Beers D, Alford DP, Brigandi E, Samet JH, A transitional opioid program to engage hospitalized drug users. *J Gen Intern Med* 2010;25(8):803-808. PMID:20237960 PMCID:[PMC2896583](#) DOI:[10.1007/s11606-010-1311-3](#)

## Naloxone Prescription for Potential Outpatient Opioid Overdose

Persons at risk for opioid overdose should be given a prescription for naloxone when they leave the hospital. This may include persons:

1. With a history of receiving emergency medical care for acute opioid poisoning or overdose
2. A suspected history of substance abuse or nonmedical opioid use
3. Receiving high-dose opioid prescriptions (E.g. >100 mg morphine equivalent)
4. Who are opioid naïve and receiving a first prescription for methadone for pain
5. Starting buprenorphine or methadone for addiction treatment
6. On opioid prescriptions for pain in combination with:
  - a. Smoking, COPD, emphysema, sleep apnea, or other respiratory illness
  - b. Renal dysfunction, hepatic disease, or cardiac disease
  - c. Known or suspected alcohol use
  - d. Concurrent benzodiazepine or other sedative prescription
  - e. Concurrent antidepressant prescription
7. Who may have difficulty accessing emergency medical services
8. Voluntary request by person or agency

## For Patients Likely to Go Back to Using Heroin

- Patients who came to the hospital actively using will likely return to active use
- Methadone administered in hospital can be abruptly discontinued
- Provide no more than 3 days of opioids to treat acute pain at discharge; some with none
- Provide naloxone emergency overdose kit

## Eric's Recovery Story

The following describes why Eric doesn't see recovery as just the absence of drugs, why he feels recovery looks different for different people, and how Eric feels physically and mentally after his surgery.

The video shows Eric seated. His head and shoulders can be seen in the shot. He's wearing a button up shirt and baseball hat. He speaks directly to the viewer.

*"Yeah, so my recovery story has been a long, drawn out thing. I don't see recovery necessarily any more as being completely absent off drugs, and then when you relapse that you're no longer in recovery. I think recovery can look different for different people. If people are using methadone or suboxone, I think that's considered recovery, and that's a good step for them to do that.*

*A lot of the best social support systems and case management groups that help people are within the harm reduction method. They're not continually shaming people and drug testing them. They seem to have a much quicker incline toward stabilization when that does happen. For me, abstinence is better for me because I feel good when I'm not using, because I'm also feeling like I have time for other things that are important to me, like being outdoors, doing meditation, or being with friends. I work with a lot of the folks in the tiny house communities, or people on the streets, and the ones that I've seen that start to become what I consider more useful to society are in the camps that don't have abstinence and sobriety as a priority. The ones that are actually harm reduction camps are those that keep people housed the longest. People in those camps tend to get more jobs, too. It may seem paradoxical, but non-stigmatization really helps with people's feelings and spirits. Then they can graduate onto something better in that situation.*

*I've been off drugs since 2009. I've had one mix-up I knew how to recover from, so I don't consider myself a complete failure for using for a little while because I came back from that situation and it was on my terms. It's allowed me to deal with the pain that still exist from all the surgeries that I had. I do have a lot of numbness and lack of range of motion from all the*

*surgeries I went through, which is frustrating. I have a lot of pain in my joints because of that. I know how to deal with it more proactively at this point. So, for me in my recovery, I go to 12 step meetings. I go to a lot of recovery based meditation meetings that are not 12 steps. Volunteering is a huge aspect of my recovery as well, the giving back without expecting anything in return. I try to really get people plugged into that method for recovery, or something else they're passionate about.*

*It's a mental health and medical issue, but in a way an indescribable thing with your spirit, whatever that is. Feeling self-esteem again is one of the best ways I've found to keep people from using again. I need to make sure that this is an everyday thing I do because I've found through relapsing again that it's not just done when I'm off drugs. There has to be this continued attention and recognition that this is a thing that can happen again. I see my partner or family members who never have drug use issues, they can have a couple drinks and not do it again for a couple months or a year. For me, even if I don't do it, I'll be thinking about it all the time. It's this weird obsession I have with that just because I know it's really enjoyable, but it works for a while until it doesn't. For me it brings me to the streets, so I just need to recognize that. I remind myself to be gentle with myself and forgive myself if I don't do it perfectly because I have a lot of expectations for myself.”*

## Answer Key

### Patients with OUD

Compared to the general population, patients with OUD:

*(Choose all that apply)*

1. Have poorer physical health *(correct)*
2. Have poorer mental health *(correct)*
3. More likely to be hospitalized *(correct)*
4. More likely to be readmitted *(correct)*
5. Higher mortality rates *(correct)*

### Pain Assessment

What information is missing in the following pain assessment note?

“Patient reports severe burning pain in the right lower leg during wound care”

*(Chose all that apply)*

1. Quality *(incorrect)*
2. Impact *(correct)*
3. Site *(incorrect)*
4. Severity *(incorrect)*
5. Temporal Characteristics *(incorrect)*
6. Aggravating & Alleviating Factors *(correct)*
7. Past Treatment & Response, Patient Preferences *(correct)*
8. Expectations, Goals, Meaning *(correct)*
9. Diagnostics, physical exam *(correct)*

## Multimodal Analgesia

Which of the following best explains the rationale for providing a multimodal analgesic regimen?

1. Combining medications with different mechanisms of action results in superior pain control and may lessen the doses needed to control pain. *(You are correct, this is the best response. Combining medications with different mechanisms of action results in superior pain control and may lessen the doses needed to control pain.)*
2. Combining medications with different routes of administration provides more flexibility to meet a patient's acute pain needs. *(Incorrect. While medications with different routes of administration (e.g. epidural local anesthetics, topical NSAIDs, oral opioids) may be part of a multimodal approach, multimodal analgesia is by definition combining analgesics and/or techniques with different mechanisms of action to improve pain control from the additive or synergistic effects among the different analgesics while lessening the adverse effects of each of the individual medications because of the differences in side effect profiles.)*
3. When used alone opioids are insufficient to control pain, particularly in a person with opioid use disorder who is usually opioid tolerant. *(Incorrect. When used alone opioids are insufficient to control pain, particularly in a person with opioid use disorder who is usually opioid tolerant. Using a multimodal approach is even more important in an opioid tolerant individual. Combining analgesics and/or techniques with different mechanisms of action can improve pain control from the additive or synergistic effects among the different analgesics while lessening the adverse effects of each of the individual medications because of the differences in side effect profile.)*

## Appropriate Responses

When offering a patient with a history of prescription opioid use disorder music to help distract during a painful dressing change and to help review/practice deep breathing exercises beforehand he/she says, “You think my pain is all in my head, my pain is excruciating, I don’t understand why you just can’t give me more pain medicine.”

Which of the following would be most appropriate response?

1. Continually increasing your opioid is unsafe (*Incorrect. A better response is #3. While opioid tolerant individuals may need higher dosages, continually increasing opioid can be unsafe. There is moderate-quality evidence to recommend the use of physical and cognitive-behavioral interventions for acute pain management.*)
2. Music and deep breathing work better if you use them together. (*Incorrect. A better response is #3. While the evidence is not clear, music and deep breathing may work better if used together for synergistic distraction and relaxation. There is moderate-quality evidence to recommend the use of physical and cognitive-behavioral interventions for acute pain management.*)
3. There is scientific evidence that using non-medicine strategies can help control pain. (*Correct. This is the best response. There is moderate-quality evidence to recommend the use of physical and cognitive-behavioral interventions for acute pain management.*)