

NIH Pain Consortium

Centers of Excellence in Pain Education



Opioid Management for Acute Pain in Hospitalized Adults

David Tauben, MD

Debra B. Gordon, RN, DNP, FAAN

Joe Anscher, MAT

Cathy Trego

Joe Wilson



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Introduction

Please note that this course is not graded. You will encounter questions to help explore scenarios that do not necessarily have a right answer and receive feedback on your choices to reinforce learning.

The scenarios presented in this module are intended to highlight and reinforce broad principles. Specific case details are left out (e.g. source of pain, reason for admission).

At the end of the course, you will be provided links to more specific details.

Learning Objectives

- Describe how to safely initiate, modify and discontinue opioids for acute pain
- Discuss differences between short and long acting opioids including methadone
- Counsel patients on safe use, storage and disposal of opioids

Overview

1. This course will teach you about the following topics:
2. Assessing patients for treatment with opioid analgesics
3. Identifying risk factors for opioid related adverse events
4. Describing how to safely initiate therapy, modify dose, and discontinue opioid analgesics
5. Distinguishing differences between short and long acting opioids including methadone
6. Counseling patients and caregivers about safe use of opioids

7. Managing ongoing therapy using a treatment plan that includes functional goals, an opioid treatment agreement, and periodic assessment of the benefits and side effects, and continued need for opioids
8. Complying with controlled substances laws and regulations
9. Referring for the treatment of abuse or addiction that may arise from the use of opioids

Scenario 1

Assess for Treatment, Identify Risk Factors, Comply with Regulations, Refer to Specialist: Mr. Jones

Mr. Jones is a new admit from the Emergency Department (ED) and will require opioids to treat his acute severe pain. He received a total of 2 mg of IV hydromorphone in the past 4 hours in the ED and responded with satisfactory pain relief and minimal sedation. Let's take a look at his history and physical exam to review his risk factors and determine an opioid regimen.

Speak to Pharmacist

The pharmacist says, *"We should check the Prescription Monitoring Program (PMP) to find out if Mr. Jones has been receiving opioids from other prescribers in the state."*

Electronic Health Record Overview

Name: John Jones

DOB: 03/01/1964

Age: 52

Gender: male

BMI: 36

Key Points from Hx and Px:

Sleep apnea

Asthma

Hypertension

Type II diabetes

Normal renal function

Somnolent but rouses easily

Knee osteoarthritis

Anxiety disorder

Prior recent surgery

Medications from home:

Albuterol

Hydrocodone 5mg/325 1 q6 prn

Clonazepam 1mg PO at bedtime daily

Lisinopril

Metformin

Test Results:

Urine Drug Test (UDT) done in ED positive for hydrocodone

PMP (Prescription Monitoring Program)

<i>Drug</i>	<i>Dispensed</i>	<i># Dispensed</i>	<i>Prescriber</i>
Clonazepam	This month	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	This month	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	Last month	1mg 30 tabs/30 days	Dr. Smith

Hydrocodone	Last month	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	2 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	2 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	3 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	3 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	4 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	4 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	5 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	5 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	6 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	6 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith

Clonazepam	7 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	7 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	8 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	8 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	9 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	9 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	10 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	10 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith
Clonazepam	11 mos. ago	1mg 30 tabs/30 days	Dr. Smith
Hydrocodone	11 mos. ago	5mg/325 30 tabs/7.5 days	Dr. Smith

Test Your Knowledge: UDT (Urine Drug Test)

Benzodiazepine was missing in the UDT, even though the patient is on clonazepam. Why could that be?

Check all that apply:

1. [Dose could be below threshold](#)
2. [Patient not taken within 3 days](#)
3. [Benzodiazepines require confirmatory tests](#)

Test Your Knowledge: Referral

Would you refer your patient to a specialist?

1. [Yes](#)
2. [No](#)
3. [Maybe](#)

Test Your Knowledge: Risk Factors for Over-Sedation/Respiratory Depression

What risk factors for over-sedation or respiratory depression from opioids does Mr. Jones have?

1. Sleep apnea or high-risk sleep disorder (morbid obesity/history of snoring/positive screening)
2. Age (<1 and >65 years old)
3. History of over-sedation with opioids
4. Opioid analgesic tolerance or increased opioid dose requirement
5. Concurrent use of other sedating drugs (e.g. benzodiazepines, antihistamines, sedative/anxiolytics or other CNS depressants)
6. History of difficult to control postoperative pain
7. Long (>6 hours) duration of general anesthesia
8. Surgery location and/or type (e.g. airway, upper abdominal, thoracic, scoliosis repair in children)
9. Medical comorbidities (e.g. pulmonary disease/smoker, cardiac disease, other major organ failures)

Test Your Knowledge: Risk for Difficult to Control Pain

What risk factors does Mr. Jones have for difficult to control pain?

1. [History of severe postoperative pain](#)
2. [Opioid analgesic tolerance \(daily use for months\)](#)
3. [Current mixed opioid agonist/antagonist treatment \(e.g. buprenorphine, naltrexone\)](#)
4. [Chronic pain \(either related or unrelated to the surgical site\)](#)
5. [Psychological comorbidities \(e.g. depression, anxiety, catastrophizing\)](#)
6. [History of substance use disorder](#)
7. [History of “all over body pain”](#)
8. [History of significant opioid sensitivities \(e.g. nausea, sedation\)](#)
9. [History of intrathecal pump use or nerve stimulator implanted for pain control](#)

Appropriate Dosing Ranges

Explore appropriate dosing ranges by reviewing each drug and considering naïve or tolerant¹ patients.

Oxycodone

Child

Naïve: between 0.09mg/kg/dose and 0.11mg/kg/dose

¹ Tolerance is a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug's effect over time.

Tolerant: refer or consult specialist

Adult

Naïve: between 5mg and 15mg

Tolerant: between 9mg and 23mg

Older Adult

Naïve: Between 2mg and 11mg

Tolerant: between 3mg and 16mg

Morphine IV

Child

Naïve: between 0.02mg/kg/dose and 0.03mg/kg/dose, under 6 months, or between 0.07 and 0.08mg/kg/dose over 6 months (max 2-4mg)

Tolerant: refer or consult specialist

Adult

Naïve: between 1mg and 3mg

Tolerant: between 1.5mg and 6mg

Older Adult

Naïve: between 0.5mg and 1.5mg

Tolerant: between 1.5mg and 4mg

Test Your Knowledge: Appropriate Oral Opioid Regimen

Which is the appropriate oral opioid regimen of oxycodone for Mr. Jones? Keep in mind his history and risk factors for opioid treatment and severe acute pain management in hospital.

1. [0mg q3hr prn](#)
2. [5mg q3hr prn](#)
3. [10mg q3hr prn](#)
4. [15mg q3hr prn](#)
5. [20mg q3hr prn](#)
6. [25mg q3hr prn](#)
7. [30mg q3hr prn](#)
8. [60mg q3hr prn](#)

Test Your Knowledge: Appropriate IV Opioid Regimen

Which is the appropriate IV opioid regimen of morphine for Mr. Jones? Keep in mind his history for opioid treatment and severe acute pain management in hospital.

1. [0mg](#)
2. [1mg](#)
3. [2mg](#)
4. [3mg](#)
5. [4mg](#)
6. [5mg](#)
7. [6mg](#)
8. [7mg](#)

Summary

Check the state Prescription Monitoring Program (PMP) to ensure accurate prescribing record

- Assess for risks of respiratory depression
- Assess for need for referral to specialist
- Avoid new prescriptions of benzodiazepines, sedative-hypnotics, anxiolytics, or CNS depressants
- Consider a number of factors when selecting starting dose including opioid tolerance, response to past treatment and risk factors for adverse side effects

Scenario 2

Initiating and Modifying Opioid Treatment: Mrs. Hubbard

Your next patient is Mrs. Hubbard. She is 72-years-old and on chronic opioid therapy with oxycodone ER 30mg BID. She's been admitted with acute severe pain requiring additional opioids.

Mrs. Hubbard says, *"I want to be pain free."*

A patient's request to be pain free is understandable but often not possible. One way you might respond to Mrs. Hubbard's request could be to say, *"We will do our best to relieve your pain, but it's generally not possible given the circumstances to make you pain free."*

Mrs. Hubbard then asks, *"Can't you please just give me more OxyContin®?"*

Use short-acting "as need" (PRN) opioids as the foundation for acute severe pain in the opioid naïve patient. Do not add or increase extended release or long acting opioids for acute pain. In response to Mrs. Hubbard's question, you might answer, *"Short acting opioids work faster. It will take several days for additional Oxycontin® to be effective. By then, your acute pain should be less. It's also unsafe to add or increase long-acting opioids for acute pain because of the potential for overdose."*

Mrs. Hubbard says, *"Well, my pain is 10/10 and I need some relief! What can you give me to be sure I'm pain free or at least bring my pain down to a 3/10? I'm 72-years-old and need to be ready for my grandson's birthday party this week."*

With older adults, it's most appropriate to "start low and go slow" when using opioids. A possible response to Mrs. Hubbard could be, *"We need to keep you safe, but also keep your pain 'well-controlled,' meaning you are able to do the activities you need to do in order to recover, without experiencing severe pain. It does not mean you will be pain-free. There*

are other types of pain medicine and techniques that don't involve medicines in order to help control the pain."

Multimodal Analgesia

Combining medications with different mechanisms of action along with nonpharmacological techniques that result in superior analgesia may lessen the dose needed to control pain.

Example: acetaminophen + gabapentin + opioid + relaxation breathing + cold pack.

Opioid Tolerance

Mrs. Hubbard tells you, *"But I have a lot of tolerance for pain medicine!"*

Patients considered opioid-tolerant are those who are taking, for one week or longer, at least:

- 60mg oral morphine/day
- 25mcg transdermal fentanyl/hour
- 30mg oral oxycodone/day
- 8mg oral hydromorphone/day
- 25mg oral oxymorphone/day
- OR an equianalgesic dose of another oral opioid

You may consider telling Mrs. Hubbard that, *"Tolerance is an important consideration at the start, but our goal is still to taper you off the medications as your pain resolves."*

Test Your Knowledge: Opioid Tolerance², Scenario 1

A patient is initiated on opioids for severe acute pain and you find out that the patient has been taking 2 tablets daily for 2 weeks of oxycodone 5/acetaminophen 325. Would you consider this an opioid tolerant patient?

1. [Yes](#)
2. [No](#)

Test Your Knowledge: Opioid Tolerance, Scenario 2

A patient has been taking 30mg of oral morphine prn averaging 3 doses per day for one month. Would you consider this an opioid tolerating patient?

1. [Yes](#)
2. [No](#)

² The FDA definition of tolerance is those who are taking, for one week or longer, at least:

- 60mg oral morphine/day
- 25mcg transdermal fentanyl/hour
- 30mg oral oxycodone/day
- 8mg oral hydromorphone/day
- 25mg oral oxymorphone/day
- OR an equianalgesic dose of another oral opioid

Test Your Knowledge: Opioid Tolerance and Starting Dose

How would opioid tolerance affect your choice of a starting dose? There may be more than one correct answer.

1. [Initiate therapy at usual starting doses](#)
2. [Initiate therapy at 1.5 to 2 times higher than starting doses for an opioid naïve patient](#)
3. [Initiate therapy at an equianalgesic dose of another opioid](#)

Test Your Knowledge: Modifying Opioid Dosage

What factors should you consider when modifying an opioid dose? More than one may apply.

1. [Severity of pain \(opioids are not indicated for mild pain\)](#)
2. [Consider patient's prior history \(e.g. side effects\) and preferences](#)
3. [Opioid tolerance: tolerant patients generally need a 1.5 to 2 times larger starting dose than an opioid naïve patient](#)
4. [Age: initiate opioid therapy at a 25% to 50% lower dose for older adults than that recommended for younger adults, and slowly and carefully titrate dosage by 25% increments on an individual basis, balancing pain relief, physical function, and side effects](#)
5. [Major organ dysfunction \(pulmonary, renal, hepatic\)](#)
6. [Route availability: oral is the preferred route of analgesia unless the patient is unable to take medication by mouth or there is a clear indication for the need for rapid relief or titration that parenteral doses provide](#)

Mrs. Hubbard says, *“I’ve been on opioids before and last time I was in the hospital I needed high doses.”*

You may consider responding with, *“Thank you for telling me that. I’ll find out what was used in the past, but this is a different time and different situation.”*

Test Your Knowledge: Starting Dose for Mrs. Hubbard

What starting dose of a prn oral immediate release oxycodone in addition to the oxycodone ER 30mg BID would you order for 72-year-old Mrs. Hubbard?

1. [0mg](#)
2. [5mg](#)
3. [10mg](#)
4. [15mg](#)
5. [20mg](#)
6. [25mg](#)
7. [30mg](#)
8. [35mg](#)

Mrs. Hubbard asks, *“What about methadone? I hear that’s a strong opioid. Or is it only used for addicts?”*

You might consider replying with, *“Methadone is a very unique long-acting opioid, used only in certain situations for pain or as part of addiction treatment programs. Methadone is not safe to use for acute pain.”*

Difference Between Methadone and ER Opioids

What makes methadone unique from extended-release (ER) opioids?

- Unpredictable long half-life (12-120 hours)
- Risk of QTc interval prolongation and Torsades de pointes particularly with high doses or when other medications are given (e.g., fluoroquinolones, macrolides, tricyclic antidepressants, SSRI) that prolong the QTc interval or influence metabolism
- No known active metabolites (methadone is metabolized by CYP3A4 and CYP2D6 enzymes)
- Lack of accumulation in patients with renal insufficiency; less than 1% removed by peritoneal or hemodialysis
- N-methyl-D-aspartate (NMDA) receptor antagonism, which theoretically may enhance its effectiveness against neuropathic pain

Electronic Health Record

While speaking with Mrs. Hubbard, you notice she's sleepy. You decide to check her electronic health record.

Overview

Name: Jane Hubbard

DOB: 02-05-1950

Age: 72

Gender: Female

Key Points from Hx and Px:

High pain intensity ratings (8-10/10)

Sleeps on and off most of the daytime hours

Medications from home:

Oxycodone ER 30mg BID

Polyethylene glycol 3350 (laxative) 17g, PO, daily

Medical Administration Record (MAR)

Time View	Yesterday 0000-2399	Today 0000-2399	Tomorrow 0000-2399
Oxycodone ER 30mg BID	30mg @0800	30mg @0800	
Oxycodone ER 30mg BID	30mg @2000	30mg @2000	
Oxycodone 15- 30mg q3h prn	20mg @0300	15mg @0300	
Oxycodone 15- 30mg q3h prn	30mg @0630	15mg @0630	
Oxycodone 15- 30mg q3h prn	30mg @0930	15mg @0930	

Oxycodone 15-30mg q3h prn	20mg @1230	15mg @1230	
Oxycodone 15-30mg q3h prn	30mg @1530	15mg @1530	0
Oxycodone 15-30mg q3h prn	30mg @1830	15mg @1830	0
Oxycodone 15-30mg q3h prn	30mg @2130	15mg @2130	0
Oxycodone 15-30mg q3h prn	30mg @0030	15mg @0030	0

Test Your Knowledge: Adjusting to Combat Sedation and Pain Intensity

Mrs. Hubbard is somnolent, sleeps most of the day, yet reports high pain intensity. What would the best action be?

1. [Reduce the dose by 25-50% at subsequent dosing intervals](#)
2. [Consider additional options to maximize multimodal analgesia³](#)
3. [Rotate to another opioid](#)

³ Combining medications with different mechanisms of action along with nonpharmacological techniques that result in superior analgesia may lessen the dose needed to control pain.

Test Your Knowledge: Adjusting for Severe Pain After No Side Effects

If the patient is wide awake and reporting severe pain after several doses with little to no side effects, what would the best actions be? More than one answer may apply.

1. [Change to IV analgesia](#)
2. [Increase the dose by 25-50% \(decrease or increase the dose until either analgesia or intolerable side effects occur by titrating in increments of 25-100% at subsequent dosing intervals\)](#)
3. [Consider additional options to maximize multimodal analgesia](#)
4. [Rotate to another opioid](#)

Immediate Release VS Extended Release Opioids

Immediate Release opioids feature the following medications:

- Hydrocodone
- Hydromorphone
- Morphine
- Oxycodone

Take note of the following for Immediate Release opioids:

- Indicated for acute pain
- Provide the cornerstone for acute pain management
- Must be swallowed whole (cannot be cut, chewed, or crushed)

Extended Release (ER) opioids feature the following medications:

- Fentanyl
- Transdermal
- Morphine ER
- Oxycodone ER
- Oxymorphone ER

Take note of the following for Extended Release (ER) opioids:

- Most dosage units contain more opioid than a starting dose
- Take days to weeks to obtain steady state after 3-5 half-lives
- Are indicated for tolerant patients only
- Order as prn

Summary

- Counsel patient on realistic expectations for pain control
- Reserve opioids for moderate to severe pain
- If opioids are used, utilize the lowest possible dose as part of a multimodal regimen, including scheduled NSAIDs, acetaminophen, and non-pharmacologic therapies, unless contraindicated.
- Use oral route when possible
- Avoid long-acting opioids for acute pain
- Titrate down or up after initial dose by increments of 25-100%

Scenario 3

Ongoing Treatment, Functional Goals, Reassessment: Mrs. Miller

Mrs. Miller says, *“My goal for pain relief is less than 5/10. Why are you reducing my opioid dose? I need more, not less!”*

There is a lack of a predictable relationship between an opioid dose and pain relief. Do not prescribe a predetermined opioid dose based on pain intensity or chase a pain rating goal with opioids.

You might respond to this patient by asking, *“What does 5 out of 10 mean to you?”* Then follow with, *“The goals for acute (and chronic) pain are function⁴ and safety.”*

Mrs. Miller replies, *“I need to be able to get out of bed and walk to the nursing station several times a day.”*

You could say, *“That’s a good goal. Let’s focus on reaching it.”*

Mrs. Miller says, *“Well, how am I going to get there if you’re already starting to decrease my opioids?”*

This patient is focused on opioids as the only means of pain management.

You might reply with, *“Well, we’re doing other things already to manage the pain. For your safety, we want to aim for the smallest dose for the shortest amount of time.”*

Acute pain resolves quickly (usually within days). The 3-7 days of opioid guidance for acute pain in the [CDC guidelines](#) do not refer to postoperative pain. The CDC defers to the [WA Agency Medical Directors Group 2015 opioid](#) guidelines for guidance on postoperative pain management.

⁴ Function” refers to emotional state, physical activity, and sleep quality.

Mrs. Miller says, *“Okay, I get it, but this makes me really nervous. I can’t imagine how I’m going to manage it. Can I have some Lorazepam?”*

Clinicians should avoid prescribing opioid and benzodiazepines concurrently whenever possible.

Your response could be, *“I understand you are concerned and want to reassure you we will work together to control your pain. However, adding lorazepam is not safe.”*

Test Your Knowledge: Patient 1

A patient who is opioid naïve has been on IV PCA for 48 hours and is now ready to convert to oral analgesia. The patient has consumed relatively stable doses of hydromorphone using 0.2mg patient initiated doses totaling 12mg hydromorphone per day. You decide to transition to oral oxycodone.

What factors do you consider in deciding what oral dose to transition to? More than one answer may apply.

1. [Equianalgesic dose](#)
2. [Renal and liver function](#)
3. [Gender, race or ethnicity](#)
4. [Anticipated pain duration](#)
5. [Age](#)
6. [Opioid tolerance](#)

Test Your Knowledge: Patient 2

Patient admitted yesterday with acute severe pain anticipated to last several days longer. Patient has been requiring frequent prn IV opioid doses from his nurse.

What would be the best next step in managing this patient's opioid treatment?

1. [Change to another IV opioid](#)
2. [Increase the dose](#)
3. [Consider the use of patient controlled analgesia \(PCA\)](#)
4. [Add an extended release opioid](#)

Test Your Knowledge: Patient 3

38-year-old patient recovering on oral hydromorphone and reported worse and poorly controlled pain. You performed focused history and physical exams and discovered no new complications or conditions.

Your next best action would be to:

1. [Switch from oral hydromorphone to IV hydromorphone](#)
2. [Increase the oral hydromorphone dose by 25-50%](#)
3. [Provide the use of all appropriate non-opioid options](#)

Summary

- Oral is the preferred route
- Consider IV PCA if repeated doses of parenteral opioids are necessary
- Avoid the routine use of continuous (basal) rates with IV PCA
- Avoid co-administration of benzodiazepines
- Do not add or increase extended release opioids for acute pain
- Avoid multiple opioid orders (therapeutic duplication). If PRN opioids from different routes are needed, provide a clear indication for use.

Scenario 4

Discharge, Taper Plan: Mr. Nguyen

You are preparing to discharge Mr. Nguyen, a 45-year-old, from the hospital with a prescription for oral hydromorphone 2 to 6mg q4h as needed. You anticipate the need for continuing opioids for 2-3 weeks given the patient's condition.

Test Your Knowledge: Discharging Mr. Nguyen

What things would you want to cover when discharging Mr. Nguyen? More than one answer may apply.

1. Provide a taper plan
2. Safe use, storage, and disposal
3. Provide no more than 2 weeks supply of opioids at time of hospital discharge, in some cases less
4. Consider discharge prescription for naloxone based on individual risk factors for opioid overdose
5. Confirm appropriate referrals for substance use disorder treatment or mental health follow-up
6. Inform the patient who is the point-of-contact for questions about opioid prescriptions after discharge

Test Your Knowledge: Opioid Disposal

The nurse tells you, *“I told Mr. Nguyen to store his opioids in a secure location where others cannot access it. What should I tell him about how to dispose of unused pills?”*

What’s your response?

1. At next clinic visit
2. With coffee grounds or kitty litter
3. Flush them
4. Keep them

Test Your Knowledge: Insurance Coverage Restrictions

The pharmacist says, *“Mr. Nyugen’s insurance company restricts coverage on the number of tablets. How much should we give him?”*

What’s your response?

1. Provide whatever the insurance company permits
2. Give 90 tablets
3. Counsel patient to taper
4. Reduce dose prior

Summary

- Instruct the family on safe use (e.g. avoid alcohol) and the planned taper
- Inform the patient and family which provider will be responsible for managing any opioids
- Remind the patient of the dangers of prescription opioid diversion and the importance of secure storage of their medications.
- Instruct the patient and family on prompt disposal of controlled substances either through a DEA-approved take-back program or FDA guidelines for safe disposal of medicine.
- The goal is always the shortest duration and lowest effective dose that is no more than a 2-week supply.

Answer Key

Scenario 1

Test Your Knowledge: UDT (Urine Drug Test)

Benzodiazepine was missing in the UDT, even though the patient is on clonazepam. Why could that be?

Check all that apply:

1. Dose could be below threshold (*correct*)
2. Patient not taken within 3 days (*correct*)
3. Benzodiazepines require confirmatory tests (*correct*)

These can all lead to benzodiazepines not being present in the UDT. A confirmatory test needs to be ordered.

Test Your Knowledge: Referral

Would you refer your patient to a specialist?

1. Yes (*not quite*)
2. No (*best answer*)
3. Maybe (*not quite*)

This patient may not necessitate a referral; however, he has a history of anxiety and may benefit from a behavioral health consult or a pain specialist for advice on opioid use due to associated risk of concomitant benzodiazepine use. However, if you are uncertain, always default to a referral.

Best answer: Consider consultation with a specialist (e.g. pain, addiction, behavioral health, laboratory medicine) for patients with complex pain and/or high risk for opioid treatment. Reason for referral may include assistance with evaluation and treatment to address persistent functional impairment due to acute pain, anxiety, aberrant behaviors, and management of transitions of care.

Test Your Knowledge: Risk Factors for Over-Sedation/Respiratory Depression

What risk factors for over-sedation or respiratory depression from opioids does Mr. Jones have?

1. Sleep apnea or high-risk sleep disorder (morbid obesity/history of snoring/positive screening) (*risk factor for Mr. Jones*)
2. Age (<1 and >65 years old) (*risk factor*)
3. History of over-sedation with opioids (*risk factor*)
4. Opioid analgesic tolerance or increased opioid dose requirement (*risk factor for Mr. Jones*)
5. Concurrent use of other sedating drugs (e.g. benzodiazepines, antihistamines, sedative/anxiolytics or other CNS depressants) (*risk factor for Mr. Jones*)
6. History of difficult to control postoperative pain (*risk factor*)
7. Long (>6 hours) duration of general anesthesia (*risk factor*)
8. Surgery location and/or type (e.g. airway, upper abdominal, thoracic, scoliosis repair in children) (*risk factor*)
9. Medical comorbidities (e.g. pulmonary disease/smoker, cardiac disease, other major organ failures) (*risk factor for Mr. Jones*)

All choices are potential risk factors for opioid induced over-sedation or respiratory depression. Mr. Jones has 4 risk factors: sleep apnea, opioid analgesic tolerance, concurrent use of other sedating drugs and specific medical comorbidities.

Test Your Knowledge: Risk for Difficult to Control Pain

What risk factors does Mr. Jones have for difficult to control pain?

1. History of severe postoperative pain (*risk factor*)
2. Opioid analgesic tolerance (daily use for months) (*risk factor for Mr. Jones*)
3. Current mixed opioid agonist/antagonist treatment (e.g. buprenorphine, naltrexone) (*risk factor*)
4. Chronic pain (either related or unrelated to the surgical site) (*risk factor for Mr. Jones*)
5. Psychological comorbidities (e.g. depression, anxiety, catastrophizing) (*risk factor for Mr. Jones*)
6. History of substance use disorder (*risk factor*)
7. History of “all over body pain” (*risk factor*)
8. History of significant opioid sensitivities (e.g. nausea, sedation) (*risk factor*)
9. History of intrathecal pump use or nerve stimulator implanted for pain control (*risk factor*)

All of the choices are potential risk factors for difficult to control pain. Mr. Jones has 3 risk factors: opioid tolerance, chronic pain and anxiety.

Test Your Knowledge: Appropriate Oral Opioid Regimen

Which is the appropriate oral opioid regimen of oxycodone for Mr. Jones? Keep in mind his history and risk factors for opioid treatment and severe acute pain management in hospital.

1. 0mg q3hr prn (*too low*)
2. 5mg q3hr prn (*too low*)
3. 10mg q3hr prn (*correct*)
4. 15mg q3hr prn (*correct*)
5. 20mg q3hr prn (*correct*)
6. 25mg q3hr prn (*too high*)
7. 30mg q3hr prn (*too high*)
8. 60mg q3hr prn (*too high*)

Since Mr. Jones has some opioid tolerance, a 1.5-2X dose would be approximately 10-20mg based on a 5-10mg starting dose.

Test Your Knowledge: Appropriate IV Opioid Regimen

Which is the appropriate IV opioid regimen of morphine for Mr. Jones? Keep in mind his history for opioid treatment and severe acute pain management in hospital.

1. 0mg (*too low*)
2. 1mg (*correct*)
3. 2mg (*correct*)
4. 3mg (*correct*)
5. 4mg (*too high*)
6. 5mg (*too high*)
7. 6mg (*too high*)

8. 7mg (*too high*)

Mr. Jones has significant risk factors for respiratory depression and has not received morphine. A range of 1-3mg is reasonable to start. Many sources say a starting dose for IV morphine in an adult is 2-4mg, but given the presence of a benzodiazepine, use of caution (e.g. start low and go slow) is warranted.

Scenario 2

Test Your Knowledge: Opioid Tolerance⁵, Scenario 1

A patient is initiated on opioids for severe acute pain and you find out that the patient has been taking 2 tablets daily for 2 weeks of oxycodone 5/acetaminophen 325. Would you consider this an opioid tolerant patient?

1. Yes (*incorrect*)
2. No (*correct*)

⁵ The FDA definition of tolerance is those who are taking, for one week or longer, at least:

- 60mg oral morphine/day
- 25mcg transdermal fentanyl/hour
- 30mg oral oxycodone/day
- 8mg oral hydromorphone/day
- 25mg oral oxymorphone/day
- OR an equianalgesic dose of another oral opioid

The patient in this scenario is taking 10mg of oxycodone daily for 2 weeks. Patients are considered opioid tolerant when taking for one week or longer, at least 30mg oral oxycodone/day.

Test Your Knowledge: Opioid Tolerance, Scenario 2

A patient has been taking 30mg of oral morphine prn averaging 3 doses per day for one month. Would you consider this an opioid tolerating patient?

1. Yes (*correct*)
2. No (*incorrect*)

The patient in this scenario is taking on average 90mg of oral morphine daily for the past one month. Patients are considered tolerant when taking for one week or longer, at least 60mg oral morphine/day.

Test Your Knowledge: Opioid Tolerance and Starting Dose

How would opioid tolerance affect your choice of a starting dose? There may be more than one correct answer.

1. Initiate therapy at usual starting doses (*correct*)
2. Initiate therapy at 1.5 to 2 times higher than starting doses for an opioid naïve patient (*correct*)
3. Initiate therapy at an equianalgesic dose of another opioid (*incorrect*)

Patients who are opioid tolerant generally need 1.5 to 2 times the usual starting dose of an opioid naïve patient, although it depends on the situation. If a different opioid is being used, the patient may not have the same tolerance. Also, if other risk factors for respiratory depression are

present, such as co-administration of other CNS depressants, lower doses may be warranted.

Test Your Knowledge: Modifying Opioid Dosage

What factors should you consider when modifying an opioid dose? More than one may apply.

1. Severity of pain (opioids are not indicated for mild pain) (*correct*)
2. Consider patient's prior history (e.g. side effects) and preferences (*correct*)
3. Opioid tolerance: tolerant patients generally need a 1.5 to 2 times larger starting dose than an opioid naïve patient (*correct*)
4. Age: initiate opioid therapy at a 25% to 50% lower dose for older adults than that recommended for younger adults, and slowly and carefully titrate dosage by 25% increments on an individual basis, balancing pain relief, physical function, and side effects (*correct*)
5. Major organ dysfunction (pulmonary, renal, hepatic) (*correct*)
6. Route availability: oral is the preferred route of analgesia unless the patient is unable to take medication by mouth or there is a clear indication for the need for rapid relief or titration that parenteral doses provide (*correct*)

All of these factors are important when modifying an opioid dose.

Test Your Knowledge: Starting Dose for Mrs. Hubbard

What starting dose of a prn oral immediate release oxycodone in addition to the oxycodone ER 30mg BID would you order for 72-year-old Mrs. Hubbard?

1. 0mg (*too low*)
2. 5mg (*correct*)
3. 10mg (*correct*)
4. 15mg (*correct*)
5. 20mg (*correct*)
6. 25mg (*too high*)
7. 30mg (*too high*)
8. 35mg (*too high*)

Although an opioid tolerant patient may need 1.5-2X the usual opioid starting dose, in an older adult it is most appropriate to start low and go slow.

Test Your Knowledge: Adjusting to Combat Sedation and Pain Intensity

Mrs. Hubbard is somnolent, sleeps most of the day, yet reports high pain intensity. What would the best action be?

1. Reduce the dose by 25-50% at subsequent dosing intervals (*correct, dependent on the situation*)
2. Consider additional options to maximize multimodal analgesia⁶ (*dependent on situation*)
3. Rotate to another opioid (*dependent on situation*)

Response to initial dosing must always be monitored to address needs to modify (decrease or increase) doses in a timely manner. Titrate in increments of 25-100% dependent on the situation. Opioids should rarely be used alone as a multimodal approach to pain is almost always indicated. Lastly, in this situation, consider opioid rotation in order to reduce opioid toxicity or side effects.

⁶ Combining medications with different mechanisms of action along with nonpharmacological techniques that result in superior analgesia may lessen the dose needed to control pain.

Test Your Knowledge: Adjusting for Severe Pain After No Side Effects

If the patient is wide awake and reporting severe pain after several doses with little to no side effects, what would the best actions be? More than one answer may apply.

1. Change to IV analgesia *(Not the best choice. Oral is a preferred route and can be further titrated unless there is urgent need for rapid relief from parenteral analgesia.)*
2. Increase the dose by 25-50% (decrease or increase the dose until either analgesia or intolerable side effects occur by titrating in increments of 25-100% at subsequent dosing intervals) *(Correct. This is part of the best response, along with considering additional options to maximize multimodal analgesia. Consider increasing the dose by 25-50% after reassessment with caution in the elderly. Also, adding other nonopioid analgesics may provide better pain control and reduce the amount of opioid needed.)*
3. Consider additional options to maximize multimodal analgesia *(correct – this is part of the best response, along with increasing the dose by 25-50%. Consider increasing the dose by 25-50% after reassessment with caution in the elderly. Also, adding other nonopioid analgesics may provide better pain control and reduce the amount of opioid needed.)*
4. Rotate to another opioid *(Incorrect. The reason to rotate to another opioid is for intolerance or allergy.)*

Scenario 3

Test Your Knowledge: Patient 1

A patient who is opioid naïve has been on IV PCA for 48 hours and is now ready to convert to oral analgesia. The patient has consumed relatively stable doses of hydromorphone using 0.2mg patient initiated doses totaling 12mg hydromorphone per day. You decide to transition to oral oxycodone.

What factors do you consider in deciding what oral dose to transition to? More than one answer may apply.

1. Equianalgesic dose (*correct*)
2. Renal and liver function (*correct*)
3. Gender, race or ethnicity (*incorrect*)
4. Anticipated pain duration (*correct*)
5. Age (*correct*)
6. Opioid tolerance (*correct*)

Acute pain tends to diminish rapidly and for many acute pain conditions, 3 days or less of opioid treatment will be sufficient; more than 7 days will rarely be needed. Use caution with equianalgesic calculations as they are rough approximations and one should always consider a number of current patient factors including the anticipated course of pain and risk factors for opioid adverse events.

Test Your Knowledge: Patient 2

Patient admitted yesterday with acute severe pain anticipated to last several days longer. Patient has been requiring frequent prn IV opioid doses from his nurse.

What would be the best next step in managing this patient's opioid treatment?

1. Change to another IV opioid (*incorrect*)
2. Increase the dose (*incorrect*)
3. Consider the use of patient controlled analgesia (PCA) (*correct*)
4. Add an extended release opioid (*incorrect*)

Consider the use of patient controlled analgesia (PCA) initially in cases where repeated doses of parenteral opioids are anticipated or required. Providers should be aware of the doses being self-administered by their patients via PCA to guide adjustments. Routine use of continuous opioid infusions (basal rates with PCA) is NOT recommended.

Test Your Knowledge: Patient 3

38-year-old patient recovering on oral hydromorphone and reported worse and poorly controlled pain. You performed focused history and physical exams and discovered no new complications or conditions.

Your next best action would be to:

1. Switch from oral hydromorphone to IV hydromorphone (*incorrect*)
2. Increase the oral hydromorphone dose by 25-50% (*incorrect*)
3. Provide the use of all appropriate non-opioid options (*correct*)

When titrating opioids for uncontrolled pain, increase in increments of 25-100% at subsequent dosing intervals. You should also provide optimal multimodal analgesia.

Additional Resources

WA State Department of Labor and Industries 2013 Guideline for Prescribing Opioids to Treat Pain in Injured Workers:

http://www.lni.wa.gov/ClaimsIns/Providers/TreatingPatients/ByCondition/Opioids/default.asp?utm_source=shortmarketingurl&utm_medium=url&utm_campaign=Opioids

WA Agency Medical Directors Group – 2015 Interagency Guideline on Prescribing Opioids for Pain:

<http://www.agencymeddirectors.wa.gov/Files/2015AMDGOpioidGuideline.pdf>

WA 2010 Legislature Engrossed Substitute House Bill 2876 Adopted Rules:

<https://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/HealthcareProfessionsandFacilities/OpioidPrescribing/AdoptedRules>

UW Medicine Pain Medicine Provider Toolkit:

<http://depts.washington.edu/anesth/education/pain/index.shtml>

CDC Guideline for Prescribing Opioids for Chronic Pain:

<https://www.cdc.gov/drugoverdose/prescribing/guideline.html>

Acute Pain Guidelines:

<https://www.ncbi.nlm.nih.gov/pubmed/26827847>