

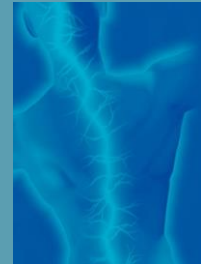
Foundations of Safe and Effective Pain Management

Evidence-based Education for Nurses, 2018

Module 1: The Multi-dimensional Nature of Pain

Module 2: Pain Assessment and Documentation

Module 3: Management of Pain and Special Populations



Section 3: Management of Pain

Objectives

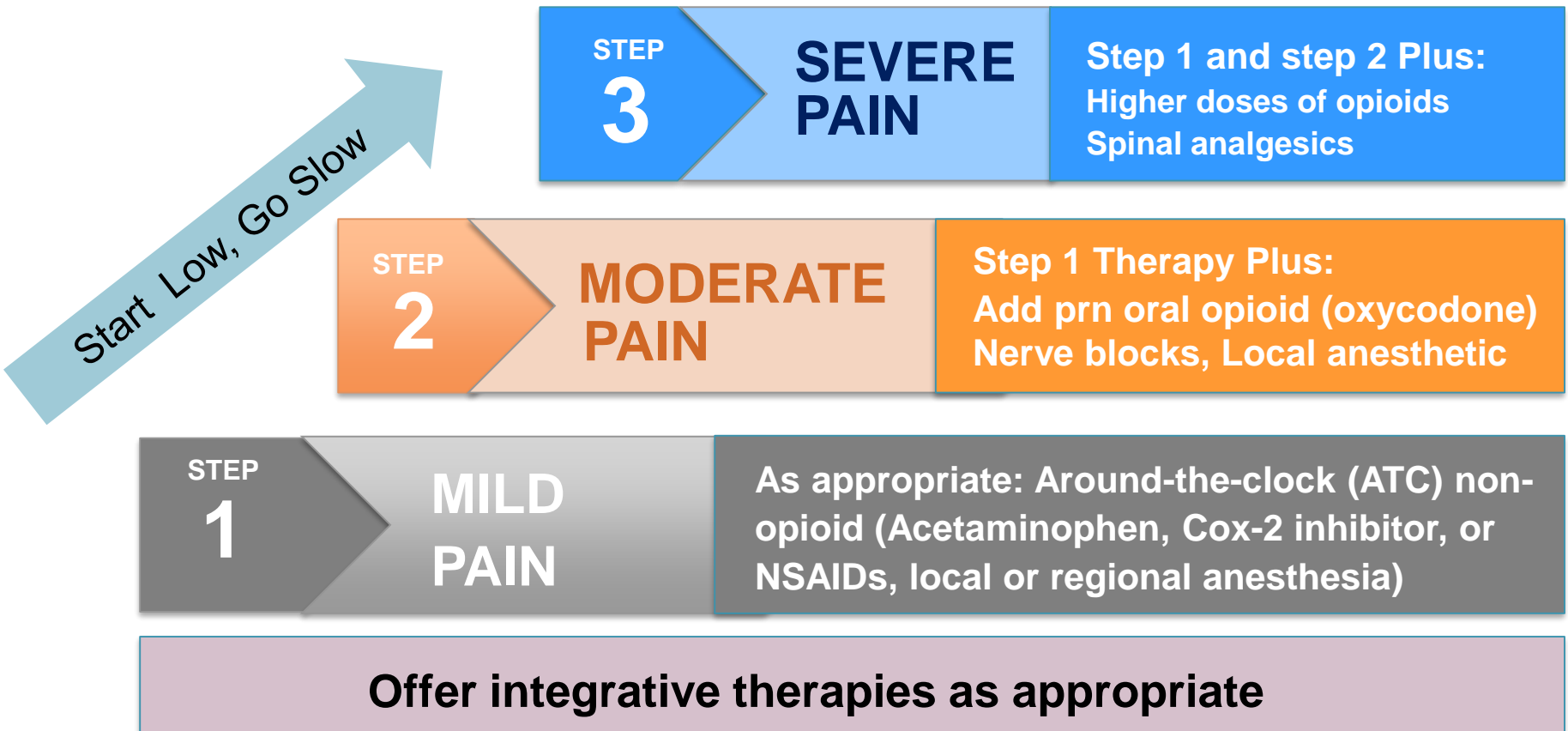
By the completion of this module, the learner will be able to:

- a. Identify pain treatment options and self management strategies that can be accessed in a comprehensive pain management plan.
- b. Develop a pain treatment plan based on: the type of pain, benefits and risks of available treatments, ongoing monitoring and necessary modifications.
- c. Describe the unique pain assessment and management needs of special populations.



Pain Treatment Options

The World Health Organization Stepwise Approach



- Step progression-medications should be added methodically with integrative therapies offered first as appropriate
- If possible, avoid giving **only** powerful Step 3 (e.g. morphine, dilaudid, etc.) agents alone in sporadic manner

Pain Treatment Options:

Understand Risks of Opioid Use

Opioids may be associated with adverse drug events, including:

Common	Clinically significant	Life threatening
Constipation	Bowel obstruction	Airway obstruction
Dizziness	Confusion	Respiratory arrest
Nausea	Dysphoria	Respiratory depression
Pruritus	Ileus	
Sedation	Vomiting	
Urinary retention		

Pain Treatment Options: *Use Multi-modal Analgesia*



What is multi-modal analgesia (MMA)?

Definition: Multi-modal analgesia combines two or more analgesic agents or techniques that use different mechanisms

*Effective use of MMA may likely result in:
reduced risk of adverse events, shorter length
of stay, less pain during rest and activity,
improved patient satisfaction.*

Examples of Multi-modal Analgesia

Non-pharmacologic therapies:

- Comfort hand massage
- Healing music
- Ice / Heat
- Meditation
- Guided imagery
- Healing touch / Reiki
- Aromatherapy
- Acupuncture
- Manipulation or massage
- Physical therapy
- Elevation



Non-opioid pharmacologic therapies = Goal

- Acetaminophen
- Anticonvulsants
- Muscle relaxants
- Non-Steroidal Anti-inflammatory Drugs (NSAIDs)
- Antidepressants
- Corticosteroids
- Neuroleptics
- Anxiolytics
- Anesthetics
- Antispasmodics



Pain Management Treatment Options

Non-pharmacologic / Integrative Therapies

Comfort Hand Massage

- Hand massage stimulates nerves, increases blood flow and relieves stress. Evidence shows it can be helpful both physically and emotionally. Anyone can give a hand massage.



Healing Music

- Music can foster healing by creating positive feelings and releasing emotional and physical distress. Some patients do not respond to music, speak with your patient to see if this would be helpful.

Ice / Heat

- Cold therapy decreases swelling, reducing pressure on nerves and tissues to decrease pain. It can also help to numb nerve endings reducing pain. Heat increases circulation to painful areas.

Meditation / Guided imagery

- Meditation methods can help reduce emotional and physical stress. It helps patients reach relaxation. Guided imagery involves listening to a script to help calm and heal. Access through Spiritual Care or on GetWell Network.

Pain Management Treatment Options

Non-pharmacologic / Integrative Therapies

Healing Touch/ Reiki

- Healing touch and Reiki use the hands for light touch to help with relaxation. May help with patient who can't sleep. May access through Spiritual Care, or specially trained staff

Aromatherapy

- Aromatherapy uses plant oils that provide pleasant scents. They can provide relaxation and healing. Evidence shows they can decrease nausea, stress, anxiety and pain.

May also be available for additional charge: Contact Patient Relations

- Manipulation / Massage
- Acupuncture

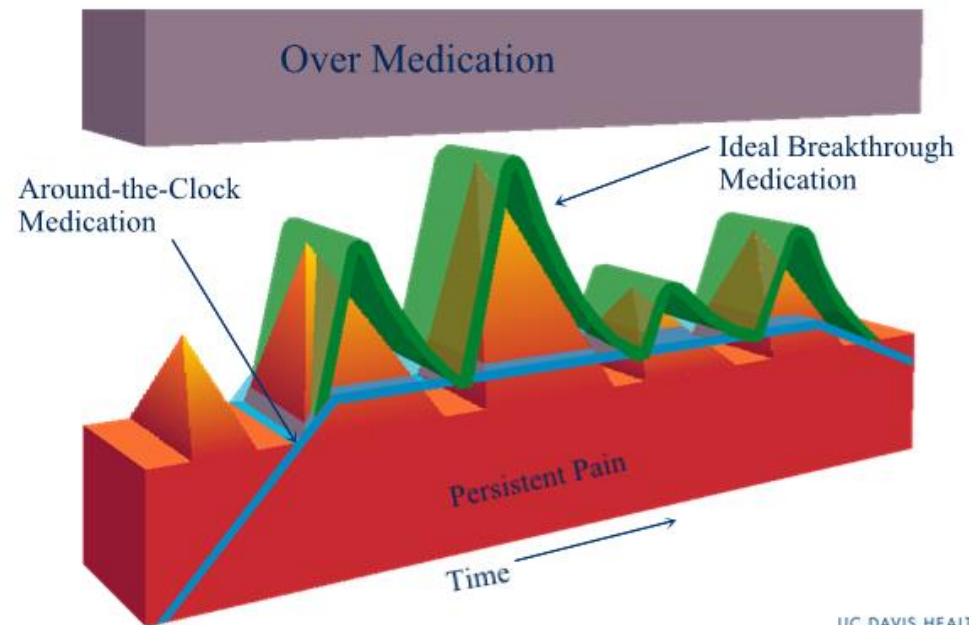


Pain Treatment Options

Pharmacologic Treatment

The Ideal Treatment

- Provide around-the-clock non-opioid medication and breakthrough medication as needed without over-medicating.
- The key is using a multi-modal approach using several mechanisms



UC DAVIS HEALTH SYSTEM

CAUTION: Limit daily dose of acetaminophen to 4,000mg as excesses can cause hepatotoxicity. Patients who are malnourished may tolerate less than 4,000mg. Consult with pharmacy as needed

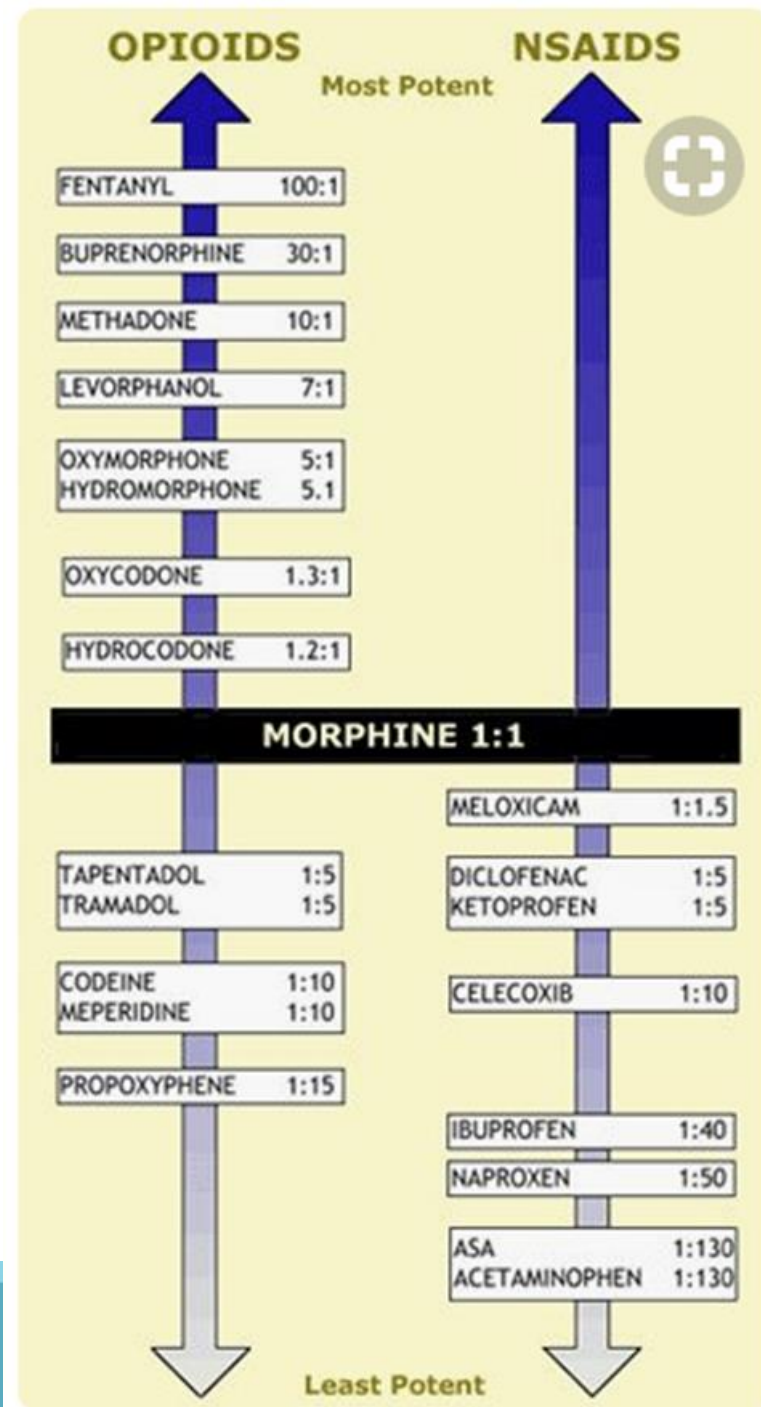
Pain Treatment Options:

Relative Potency of Opioids

Be familiar with the relative potency of opioids and use cautiously especially in combination with other CNS depressant medications.

- *For example: 1mg of IV hydromorphone (dilaudid) is equivalent to 6-7mg of IV morphine*

CAUTION: Opioids have caused over-sedation and respiratory depression at Sharp.



Challenge Question

A patient has a functional pain rating of 5 and an acceptable pain intensity of 3. Ibuprophen 400mg po every 6 hours is ordered. In addition, 4mg IV morphine every 4 hours prn is ordered. Which of the following would be the best FIRST course of action by the nurse:

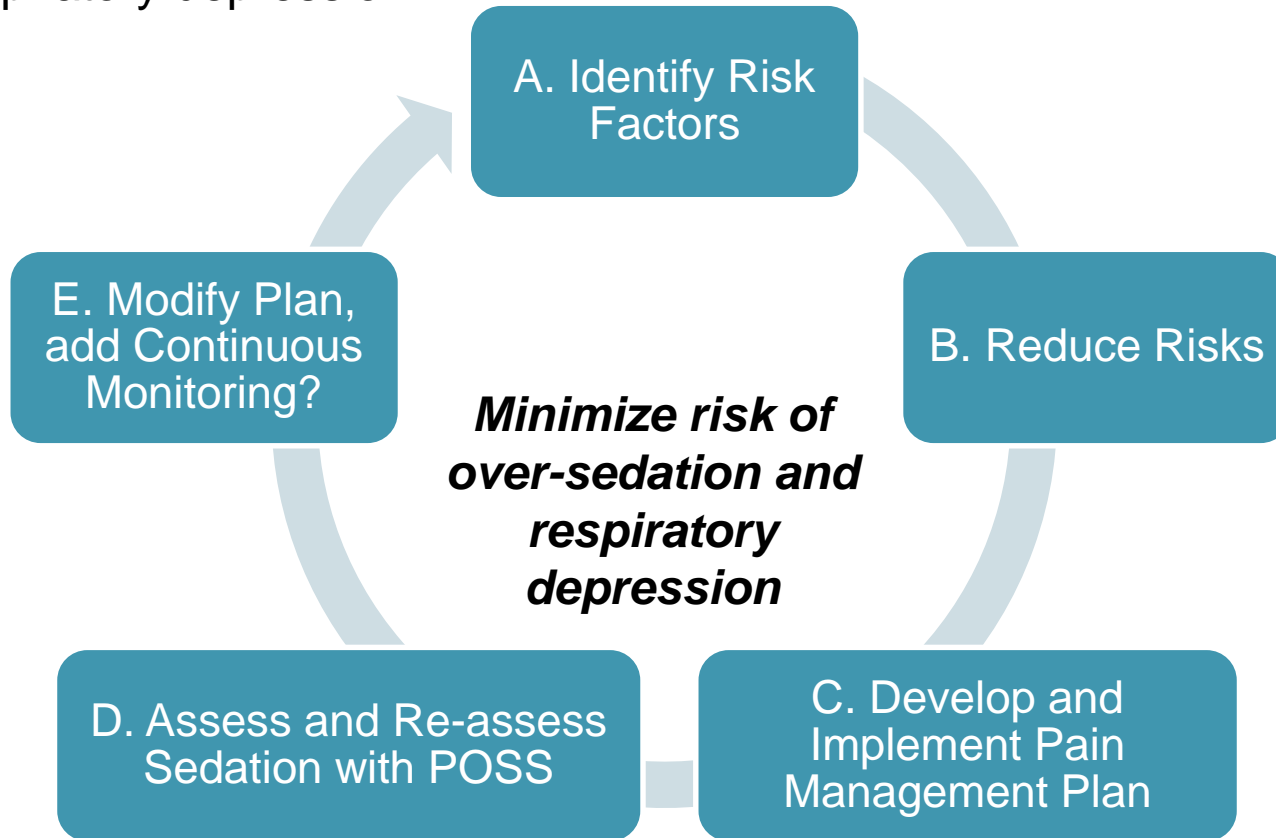
- A. Offer integrative therapies
- B. Call the physician to request an increase in the ibuprophen dose
- C. Give 4mg IV morphine now
- D. Encourage the patient to have a higher acceptable pain intensity

Answer: A

Reducing Risk of Over-sedation and Respiratory Depression

The California Opioid Assessment and Action Safety Tool (COAST)

A new decision-support tool to help identify which patients are at risk for respiratory depression.



Full Tool Kit Available at:

<http://www.hqinstitute.org/post/reducing-harm-respiratory-depression-non-icu-patients-through-risk-mitigation-and-respiratory>

Reducing Risk of Over-sedation and Respiratory Depression

Patient Problems / Challenges

A. Identify Risk Factors

1. Uncontrolled pain causing increasing opioid dose requirement
2. Altered Airway Issues
3. Increased Sedation, decreased respiratory rate
4. Decreased ventilation
5. Impaired gas exchange
6. Altered drug metabolism
7. Patient surveillance barriers

B. Reduce Risks

General Risk Reduction Tactics:

1. Encourage one physician to manage opioid orders
2. Patient/family engagement: realistic expectations and risk awareness
3. Use stepwise approach with multi-modal therapies
4. Differentiate between pain, anxiety and agitation and manage appropriately
5. Be aware of total morphine equivalents in past 24 hours and consider peak effects of all CNS depressants when administering medications

CAUTION: Dose stacking of Central Nervous System (CNS) depressants is a common risk

6. Consult pharmacy or other pain specialists resources for patients with complex pain management needs

B. Reduce Risks



Risk Reduction Tactics for Airway Issues

1. RCP screening for Obstructive Sleep Apnea (OSA)
2. Adjust patient positioning to optimize ventilation
3. Use routine incentive spirometry and early mobilization
4. Use non-invasive ventilation / Continuous positive airway pressure (CPAP) Bi-level Positive Airway Pressure (BiPAP) as appropriate
5. Implement continuous electronic monitoring of oxygenation (SpO₂) and ventilation (EtCO₂)

CAUTION: When patients are receiving supplemental oxygen, the SpO₂ may remain high even in the presence of hypoventilation and increased EtCO₂ – Avoid false confidence in a normal SpO₂!

B. Reduce Risks

Risk Reduction Tactics for Altered Drug Metabolism

1. Avoid morphine in patients with decreased renal clearance
2. Patients who are opioid tolerant should be managed carefully using multi-modal therapies and experts consulted as needed

Decrease opioid doses for patient with:

Low albumin

Renal Failure

Hepatic disease

Low BMI

Elderly (altered drug absorption)

High BMI (altered drug absorption)

Opioid naïve



B. Reduce Risks

Risk Reduction Tactics for Patient Surveillance Barriers

1. Customize alarm parameters to monitor effectively while minimizing nuisance alarms
2. Instruct patient and care givers about the dangers of turning off alarms
3. Ensure effective handover communications between departments and shifts
4. Relocate patients for increased visibility and / or assign a sitter to observe patients as needed
5. Use centralized, remote monitoring if available
6. Use translators as needed when language barriers are present



C. Develop and Implement Pain Management Plan

- **NEW!** Sharp will be replacing the Analgesics Common Powerplan with a New Pain Management Powerplan *coming soon!*
- Optimally, opioids should be ordered by **one** provider who takes into account all risk factors including other sedating medications
- *RNs should avoid calling multiple providers to obtain pain and/or agitation management orders when possible*
- Summary of changes:
 - Integrative and non-pharmacologic therapies are included as options
 - Around the clock non-opioids are offered as an option
 - When acetaminophen is given around the clock, opioids that contain acetaminophen (e.g. Percocet, Vicodin, Norco) must not be given.
 - An acetaminophen calculator is being developed in Cerner.

☒ **Patient Care Instructions** Discuss PAIN plan of care with patient, set realistic Acceptable Level of Pain. Realistic achievable level of pain reductions are 50% for opioid naive and 30% for opioid tolerant.

C. Develop and Implement Pain Management Plan

Pain Management Powerplan: Five Sections



1. Patient Status

- Parameters to call provider
- Ice / heat use
- Set realistic goals

2. Integrative Medicine

- Aromatherapy
- Reiki
- Other services

3. Scheduled Medication

- Around the clock options
- Patches

4. PRN Medication

- Starts low with oral options
- Higher doses for opioid tolerant/ chronic pain









5. Monitoring

- Continuous oxygen saturation
- Capnography

C. Develop and Implement Pain Management Plan

An Interdisciplinary Plan Of Care (IPOC) Example

- Include:
 - Patient stated goal
 - Realistic / Acceptable level of pain
 - Individualized interventions
- Evaluate every 24 hours
 - Revise, as needed, according to patient response to treatment

IPOC - A Person-Centered Plan, Nursing (Initiated) 1/4/2018 12:24 PST	
	Pain #1 Intensity
	Acceptable Pain Intensity
	POSS Score
	Providing Nsg Intervention to: Assess pain as needed
	Providing Nsg Intervention to: Apply ice to leg and elevate 4x a day
	Providing Nsg Intervention to: Medicate with ATC acetaminiphen as ordered
	Providing Nsg Intervention to: Medicate with prn oxycodone for pain level above 5
	Providing Nsg Intervention to: review guided imagery videos from GetWell with patient and wife

D. Assess and Re-assess Sedation with POSS

Assess sedation level before and after opioids

Use POSS for unintended sedation related to Opioids

Sedation Scales

Pasero Opioid-induced Sedation Scale (POSS)

Right click for POSS reference **NOT for Health**

Use to assess sedation in patients receiving opioids for pain management

- 0 = Sleep, easy to arouse
- 1 = Awake and alert
- 2 = Slightly drowsy, easily aroused
- 3 = Frequently drowsy, arousable, drifts off to sleep during conversation
- 4 = Somnolent, minimal or no response to verbal or physical stimulation

NEW!

The initial reassessment should be completed:

IV/ intranasal/buccal	within 10-30 min
PO / IM / SC / rectal	within 45-60 min
Transdermal	within 12 hours and every shift

D. Assess and Re-assess Sedation with POSS

Assessing Sedation in a Patient Who is Sleeping

- Awaken the patient to perform a Pain and Sedation Assessment if:
 - the respiratory rate is < 10
 - respirations are irregular, shallow, or noisy (even mild snoring)
 - the patient does not change position or demonstrate movement in response to light touching of the patient's shoulder or gentle moving of the bed
- However, the patient may be allowed to continue sleeping if:
 - pain has been well managed without over-sedation
 - respirations are quiet, regular, deep and rate > 10 /minute, and
 - light touching of the patient's shoulder or gentle movement of the bed results in patient movement

Response to POSS Score

To prevent unintentional over sedation and respiratory depression

0 = Sleep, easy to arouse

- ***Acceptable; no action necessary; may increase opioid dose if needed***

1 = Awake and alert

- ***Acceptable; no action necessary; may increase opioid dose if needed***

2 = Slightly drowsy, easily aroused

- ***Acceptable; no action necessary; may increase opioid dose if needed***

3 = Frequently drowsy, arousable, drifts off to sleep during conversation

- ***Unacceptable; monitor respiratory status and sedation level closely until sedation level is stable at less than 3 and respiratory status is satisfactory***

4 = Somnolent, minimal or no response to verbal or physical stimulation

- ***Unacceptable; stop opioid; consider administering naloxone; notify prescriber or anesthesiologist; monitor respiratory status and sedation level closely until sedation level is stable at less than 3 and respiratory status is satisfactory***

E. Modify Plan, add Continuous Monitoring?

Continuous Monitoring of CO₂: End Tidal CO₂ (EtCO₂) (capnography) and Transcutaneous Methods

1. If all attempts have been made to mitigate risks of opioid over-sedation and the patient remains at risk with POSS scores of 3 or 4, consider the use of continuous CO₂ monitoring
2. Continuous CO₂ monitoring is in the process of being implemented in many departments across Sharp
3. Call the Rapid Response Team if CO₂ monitoring has not been fully implemented on your unit
4. Refer to the Nursing Guidelines of Care for detailed information



Challenge Question: Case Study

John is a 74 year old with a history of sleep apnea
Yesterday he had a total knee replacement and a nerve block for pain management. He does not normally take opioids for pain at home
What is the best plan to minimize his pain?

- A. Administer IV hydromorphone 0.4 mg PRN for the first 24 hours, then switch to oral Norco PRN pain
- B. Offer ice and elevation, administer an around-the-clock non-opioid and a low dose opioid PRN only if pain is above acceptable pain level.
- C. Have John watch a mindfulness video and administer around-the-clock Percocet with hydromorphone PRN
- D. John cannot have opioids, we will need to give him non-opioids and monitor his sleep apnea

Correct! Answer is B

Case Study Continued...

The following day, John tells you his acceptable level of pain is 4, his current pain score is 7. He has been taking around-the-clock acetaminophen, Celebrex and using ice intermittently. You believe his nerve block is wearing off.

Which of the following would the nurse do next?

- A. Offer additional integrative therapies and if still ineffective then administer the ordered low dose of oxycodone and closely monitor for over-sedation and respiratory depression
- B. Administer the ordered IV hydromorphone
- C. Add continuous capnography monitoring

Correct! Answer is A

Managing Pain in Special Populations

Objectives

Describe the unique pain assessment and management needs of special populations.

- a. End of life care
- b. Addictive Illness
- c. Mental Illness
- d. Non-English speaking
- e. Elderly
- f. Children

a. End of Life Pain Management

National Comprehensive Cancer Network (NCCN): Guidelines for Treating Pain Weeks to Days Before Death

Assessment and management of pain is critical
First: Rule out other potential causes of distress

- Maintain analgesic therapy - titrate to optimal comfort
- Educate family/caregiver on role of pain medication in the dying process
- Do not reduce dose for decreased BP, RR or LOC when opioid is needed for treatment of pain or dyspnea at end of life
- Recognize and treat opioid-induced toxicities
- Modify routes of administration as needed
- Continue to treat and monitor symptoms and quality of life
- Consider sedation for refractory pain
- Consider a consultation with a pain management or palliative care specialist

b. Pain Management in Patients with a History of Addictive Disease or Current Use of Illicit Substances

CAUTION: Assuming that reports of pain is drug-seeking behavior may result in not recognizing an underlying issue that needs intervention.

Thoughtfully differentiate drug-seeking behavior from legitimate reports of pain:

1. Has the pain been thoroughly assessed and all potential causes of pain been addressed?
2. Has the patient had consistent high pain scores even after pain interventions and in the absence of distress or other pain symptoms?
3. Does the patient consistently request opioid medications without a physiologic cause of pain or after underlying cause of acute pain has resolved?
4. Does the patient refuse to take other non-opioid analgesics in favor of powerful opioid medications
5. Does the patient have a history of psychiatric disorder with accompanying substance abuse of non-opioid and opioid substances?



c. Pain Assessment and Management in Patients with Mental Illness

- Patients on psychotropics in combination with opioids may be at increased risk for oversedation.
- Opioid use may mask or mimic mental illness symptoms and a psychiatric consultation may help differentiate behavioral symptoms.



d. Pain Assessment and Management in Non-English Speaking Patients

***New** Functional Pain Scale- Use with interpreter for functional rating **Coming soon** in Chinese, French, Italian, Japanese, Portuguese, Romanian, Spanish, and Vietnamese

Instructions for the Wong-Baker FACES Pain Rating Scale

Available in Chinese, French, Italian, Japanese, Portuguese, Romanian, Spanish, and Vietnamese

Instructions for the Numerical Rating Scale

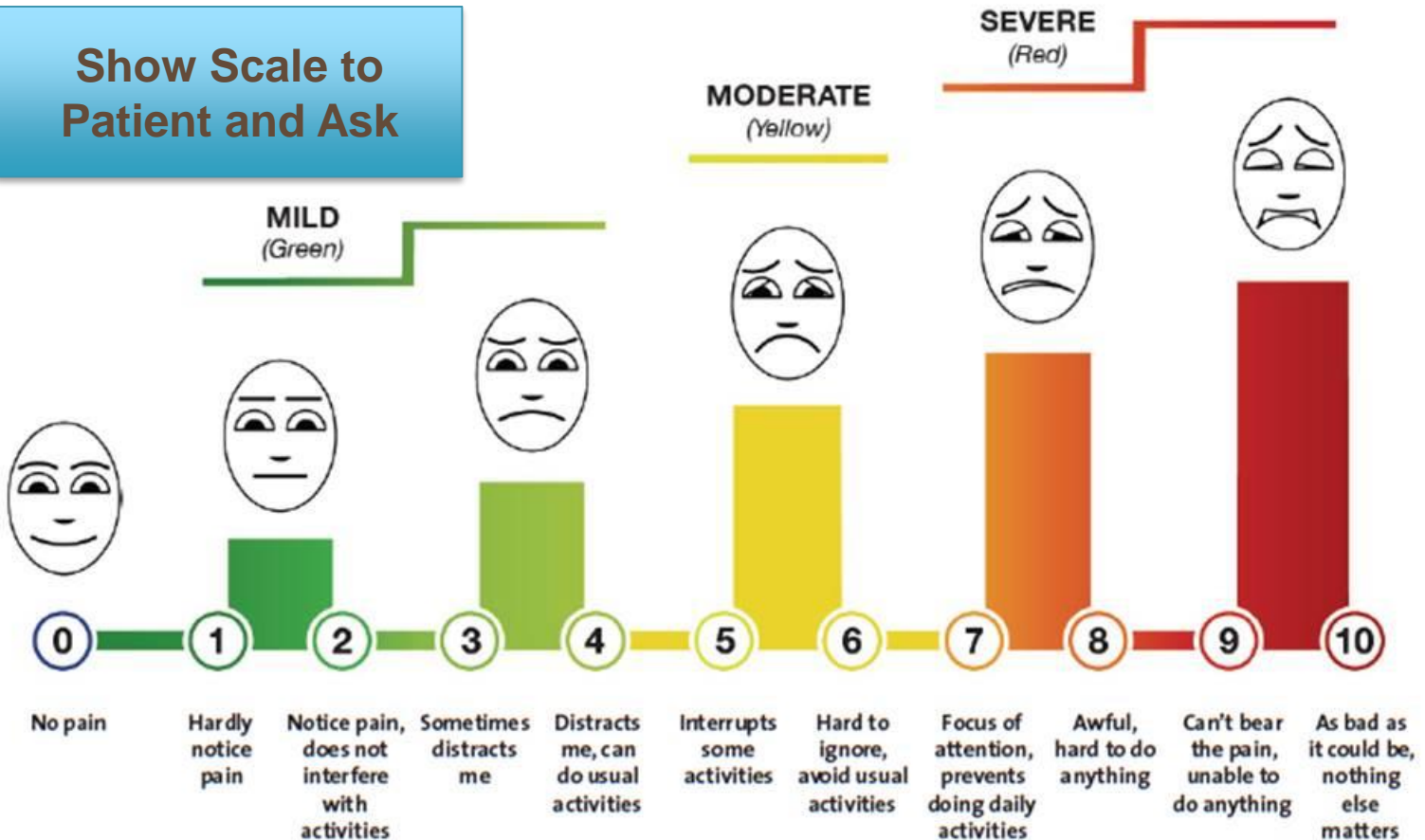
Available in Chinese, French, German, Greek, Hawaiian, Hebrew, Ilocano, Italian, Japanese, Korean, Pakistan, Polish, Russian, Samoan, Spanish, Tagalog, Tongan, and Vietnamese

Available at: <http://sharpnet/pharmacy/Pain-Management.cfm>

Please look at the following pain scale, and circle the number on the rating scale below that best represents the amount or degree of pain you are having right now.

Functional Pain Rating Scale

Show Scale to Patient and Ask



v 2.0

e. Pain Assessment and Management in Patients Who are Elderly



- Often have acute and chronic pain at the same time
- Under report their pain
- Accept pain as part of aging
- May use words such as “ache” or “sore” instead of “pain”
- May take a variety of medications that could interact with pain medications
- Susceptible to side effects, including constipation

f. Pain Assessment and Management in Children with Pain



- Feel pain just as intensely as older patients
- Need special tools to help them communicate their pain, such as using the Wong-Baker FACES pain rating scale
- May see pain as a punishment
- Always involve the parent or caretaker in the pain assessment process

Summary of Key Points

- Start low and go slow with opioids by considering options of around-the-clock non-opioids and integrative therapies
- Be familiar with the relative potency of opioids
- Identify all risk factors for potential over-sedation and respiratory depression
- Reduce the risks of over-sedation and respiratory depression
- Consider capnography when risks cannot be reduced
- Individualize the patient's plan of care for pain management

Author Information and References

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2018

For references and other resources, please visit:
<http://sharpnet.sharp.com/pharmacy/Pain-Management.cfm>

**The following two slides contain additional Reference Information re:
The California Opioid Assessment and Action Safety Tool (COAST)
A new decision-support tool to help identify which patients are at risk for
respiratory depression**

1. Unexplained, Unexpected, or Uncontrolled Pain, Anxiety, Agitation, or Delirium Creating Increased Opioid Dose Requirement

Underlying issue that requires procedural or other intervention

Opioid Tolerance

Drug Seeking Behavior

2. Altered Airway Issues

STOPBANG/OSA FACTORS:

Snoring
Tiredness
Observed Sleep Apnea
High Blood Pressure
BMI > 35 kg/m²
Age > 50 years old (>75 years old higher risk)
Neck > 17" (M) 15" (F)
Gender: Male

STOPBANG Score:

Low Risk = 0-2
Medium = 3-4
High Risk = 5-8

History of Difficult Intubation

Anatomical Airway Obstruction (e.g., malocclusion, swelling)

3. Increased Sedation/Decreased Respiratory Rate

Recent unplanned administration of reversal agent

General Anesthesia:

Within 1st 24 hours and/or Prolonged surgery > 2 hours

Prescribed Opioids*

(Dose and Frequency Dependent)

Highest Risk:

hydromorphone IV, morphine IV, fentanyl patch or IV, methadone IV or PO, opioid infusion, implanted pain pump

Moderate to High Risk:

Morphine PO, hydromorphone PO, fentanyl (Buccal), oxycodone PO, hydrocodone/acetaminophen PO

High Risk Non-Opioids*

Benzodiazepines:

alprazolam, clonazepam, diazepam, lorazepam, midazolam, oxazepam, temazepam

Non-benzodiazepines:

Eszopiclone, zaleplon, zolpidem, zopiclone

Anti-Nausea Medications:

promethazine, prochlorperazine, diphenhydramine

Anti-depressants / Anti-Psychotics:

mirtazapine, olanzapine, quetiapine, risperidone, haloperidol, trazodone

Muscle Relaxants:

cyclobenzaprine, baclofen

Patient Problems / Challenges Contributing to Respiratory Depression and Arrest

A. Identify Risk Factors

Contributing Causes

Based on the importance of the identified problems and contributing factors, determine the patient's level of risk for respiratory depression and then consult with your care team.

Full Tool Kit Available at:
<http://www.hqinstitute.org/post/reducing-harm-respiratory-depression-non-icu-patients-through-risk-mitigation-and-respiratory>

*This list is not comprehensive.

Patient Problems / Challenges Contributing to Respiratory Depression and Arrest

A. Identify Risk Factors

Contributing Causes

Based on the importance of the identified problems and contributing factors, determine the patient's level of risk for respiratory depression and then consult with your care team.

4. Decreased Ventilation

Thoracic, Abdominal, or Major Spinal Surgery

Rib Fracture

Pregnancy

Non-adherence to Prescribed NIV Regimen

Neurological Deficit (e.g., stroke, neuromuscular disease)

Dependent Functional Status (e.g., Prolonged Immobilization/ Bed Rest, ASA status 3-5)

5. Impaired Gas Exchange

Smoker

Pulmonary Disease (e.g., COPD, Pneumonia)

Oxygen Therapy (SpO₂ may not drop noticeably during hypoventilation due to high FIO₂)

Cardiac Dysfunction (e.g., CHF)

DKA

6. Altered Drug Metabolism

Kidney Clearance
CrCl < 50mL/min
or BUN > 30 mg/dL

Liver Failure (e.g., Increased Liver Enzymes, Alcoholism, Ascites)

BMI
< 18.5 kg/m
> 35 kg/m

Age
> 65 years old high risk
> 75 years old very high risk

Albumin < 30 g/L
(Decreased Drug Binding)

Opioid Naïve/
Sensitive

Opioid Tolerant

7. Patient Surveillance Barriers

Poor Visibility of Patient by Staff

Alarm Management Issues such as:

- Lack of effective monitoring
- Risk that alarm not responded to in timely manner
- Risk that alarm doesn't trigger when it should (e.g., disconnected)

Situational Awareness Challenges (e.g., Night shift, busy department)

Inadequate Handover of Information

Language Barriers