

# MANAGING PAIN IN PALLIATIVE CARE

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DISCLOSURES

NONE 😊

## OBJECTIVES

1

Define Pain

2

Describe the different types of pain

3

Describe a step-by-step approach to assessing pain

4

Discuss an approach to managing pain in the palliative care patient

## WHAT IS PAIN

- "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage"

"IASP Terminology - IASP." *Iasp-Pain.Org*, 2019, [www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698](http://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698).

## TYPES OF PAIN



### Nociceptive

Somatic

- Well localized

Visceral

- Less localized, may be referred

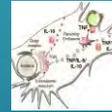


### Neuropathic

Dysthesia/Paresthesia

Hyperalgesia

Allodynia



### Inflammatory

Result of activation and sensitization of the nociceptive pain pathway by a variety of mediators released at a site of tissue inflammation

"Classification of Pain - Pain Management." *Wisc.Edu*, 2010, [projects.hsl.wisc.edu/GME/PainManagement/session2.4.html](http://projects.hsl.wisc.edu/GME/PainManagement/session2.4.html).

## CICELY SAUNDERS'S CONCEPT OF TOTAL PAIN

- Total pain: The suffering that encompasses all of a person's physical, psychological, social, spiritual, and practical struggles
- Palliative care seeks to address total pain while addressing whole person care
- Interdisciplinary team.

Ong, C.-K., & Forbes, D. (2005). Embracing Cicely Saunders's concept of total pain. *BMJ : British Medical Journal*, 331(7516), 576–577.

## PAIN IS PREVALENT IN PALLIATIVE CARE

Advanced cancer  
– prevalence of  
75%

CHF –  
prevalence of  
20-78%

COPD –  
prevalence of  
21-77%

Chronic renal  
failure –  
prevalence of  
21-64%

Stroke –  
prevalence of  
68%

Cancer Therapy Advisor. "Palliative Care: Pain Management - Cancer Therapy Advisor." *Cancer Therapy Advisor*, 17 Jan. 2019, [www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/](http://www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/).

## EVALUATION OF PAIN

### Comprehensive History

- PMH, PSH, PFH, Social, Allergies, Medications
- Diagnosis/Prognosis

### Specific pain history

- OPQRST
- LOCATES
- Validated tools such as the Brief Pain Inventory or numerous others

### Physical Exam

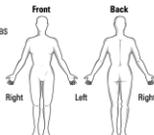
Cancer Therapy Advisor. "Palliative Care: Pain Management - Cancer Therapy Advisor." *Cancer Therapy Advisor*, 17 Jan. 2019, [www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/](http://www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/).

**Brief Pain Inventory—Short Form**

First Name \_\_\_\_\_ Date \_\_\_\_\_  
 Last Name \_\_\_\_\_ Time \_\_\_\_\_

1. Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?  
 Yes  No

2. On the diagram, shade in the areas where you feel pain. Put an X on the area that hurts the most.



3. Please rate your pain by circling the one number that best describes your pain at its **worst** in the last 24 hours.

No pain | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Worst pain imaginable

4. Please rate your pain by circling the one number that best describes your pain at its **least** in the last 24 hours.

No pain | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Worst pain imaginable

5. Please rate your pain by circling the one number that best describes your pain on the **average**.

No pain | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Worst pain imaginable

6. Please rate your pain by circling the one number that tells how much pain you have **right now**.

No pain | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Worst pain imaginable

Cont >

**Brief Pain Inventory—Short Form (cont'd)**

7. What treatments or medications are you receiving for your pain?

8. In the last 24 hours, how much relief have pain treatments or medications provided? Please circle the one percentage that shows how much **relief** you have received.

No relief | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Complete relief

9. Circle the one number that describes how, during the past 24 hours, pain has interfered with you:

**A. General activity**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

**B. Mood**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

**C. Walking ability**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

**D. Normal work (includes both work outside the home and housework)**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

**E. Relations with other people**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

**F. Sleep**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

**G. Enjoyment of life**  
 Does not interfere | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Completely interferes

Donald C.S. Ryan MD. Pain assessment: global use of the Brief Pain Inventory. *Ann Acad Med Singapore*. 1994;23(2):129-138.

Table 1. Pain Scales

Pain Scale Name (Population)	Description	Validity	Comment
Alder Hey Three Pain Score (Emergency care/acute of pediatric patients)	Observational scale comprised by staff. 5 items each scored 0 to 2 with total score 0 to 10 possible	Validated for inter-rater variability	Easy to administer, takes about 10 minutes, patients need not be able to communicate
Behavioral Pain Scale (BPS) (Critically ill/acute adult patients)	Observational scale completed by staff, scores from 3 to 12	Validated for inter-rater variability and reliability	Validated for use with patients with a low level of consciousness due to head trauma <sup>2</sup>
Brief Pain Inventory (BPI) (Adult cancer patients)	Self-report of pain intensity (primary dimension) and how pain interferes with patient's life (reactive dimension)	Validated and translated into numerous languages	Has been validated for use in patients with chronic nonmalignant pain <sup>3</sup> and osteoarthritis <sup>4</sup>
Checklist of Nonverbal Pain Indicators (CNPI) (Cognitively impaired adult patients)	Observational test completed by staff based on specific behaviors, restlessness, vocalization	Inter-rater reliability 93% <sup>5</sup>	Requires staff training
Clinical Global Impression (CGI) (Psychiatric patients)	Observational assessment of patient's global function before and after study medication, if measures psychopathology severely on a scale of 1 to 7	Validated and reliable <sup>6</sup>	Easy to administer
Critical Care Pain Observation Tool (CPOOT) (Nonverbal critically ill adults)	Observational scale of behaviors: facial expression, body movements, and muscle tension	Moderate to high inter-rater reliability and significant correlations between CPOOT and self-reported pain scales <sup>7</sup> ; sensitivity 86%, specificity 78% in study of critically ill cardiac surgery patients <sup>8</sup>	For intubated patients, compliance with ventilator is assessed; for non-intubated patients, vocalizations is assessed
COMFORT Scale (Children unable to report pain; has been evaluated in patients age 12 to 36 months)	Observational care completed by staff evaluating alertness, anxiety, respiratory response, crying, movement, muscle tone, and facial tension	High inter-rater reliability	Requires staff training
Dallas Pain Questionnaire (DPQ) (Adult patients with chronic spinal pain)	16-item self-report measuring pain intensity, function, anxiety, depression, and social interest	Good external reliability and internal consistency <sup>9</sup>	DPQ is divided into 2 sections called "factors"; Factor 1 represents functional activities; Factor 2 emotional capacities
Descriptor Differential Scale (DDS) (Alert and nonintubated adults)	Self-report in 12-item questionnaire	Good reliability and is sensitive to even small changes in pain intensity <sup>10</sup>	Easy for patients to use but requires some training for health care team to interpret
Discomfort in Dementia (DS-D4) (Adults with dementia or Alzheimer's disease)	Observational 9-item tool for completion by staff over 5-minute assessment period	Inter-rater variability exists in 3 of the 9 items	Requires staff training to administer accurately
Edmonton Symptom Assessment System (Palliative care patients, typically end-of-life cancer patients)	Twice-daily assessment using 8 visual analog scales to be completed by patient alone or by patient with assistance from nurse or family member	Validation evidence is not robust <sup>11</sup>	Data from the 8 scales are transferred to a graphic; the sum of all scores is the "symptom distress score" has been translated into several languages
FACES (Wong-Baker) (Pediatric patients; page 3 to 7) treated for acute pain in emergency department)	Self-report using 6-item ordinal scale made up of 6 faces showing no pain (smiling face) to worst pain (frowning face)	Validated with good agreement between FACES and visual analog scale <sup>12</sup>	May also be used for adults when there is a language barrier
Licium-Almondinal Index (1967, 1991, 1997) (Adult pain patients with circadian type of pain)	Self-report in 10-item questionnaire that puts pain in temporal context (pain at night, upon rising) and situations (pain standing, pain walking, and so on)	Validated	Easy to administer, takes about 10 minutes, and is well suited for pain that fluctuates over course of day

Marlowe's Pain Scale (Developed for endometriosis patients but used with other types of chronic pain)	Self-report on 8 to 10 scale with descriptors to help better quantify pain (for example, 3-pain that can't be ignored for more than 30 minutes; mild pain/killers reduce this pain about 3 or 4 hours)	Validated for chronic pain patients (not just endometriosis patients) <sup>13</sup>	Developed by Andrea Marlowe, a chronic pain patient
McGill Pain Questionnaire (MPQ) (Adults with various pain syndromes)	Self-report, 20 items grouped as sensory, affective, evaluative, and miscellaneous; patients score each 0 to 5; The Pain Rating Index (PRI) is the sum of the rank values	Validated and designed to better capture the subjective experiences of pain patients <sup>14</sup>	Also rates the Present Pain Index (PPI) as a separate scale (0-5)
Neck Pain and Disability Scale (NPDS) (Adults with cervical pain syndromes)	Self-report of 20 items as visual analog scales with descriptors, describing different aspects or behaviors associated with the neck	Reliable, internally consistent, correlates well with other scales <sup>15</sup>	
Numerical Rating Scale (NRS) (Adult and pediatric pain patients)	Self-report on scale of 0 to 10 with 0 meaning "no pain at all" and 10 "the worst pain imaginable"	Reliable, validated, widely used <sup>16</sup>	Minimal training required, easy for patients to understand; measures pain intensity only
OSWESTRY Disability Index (Adults with low back pain)	Self-report of pain intensity and function (disability)	Validated and correlates highly with the Roland-Morris Disability Index <sup>17</sup>	Fair and easy to administer, easy for patients to understand
Palliative Care Outcomes Scale (PCOS) (Adult palliative cancer patients)	2 nearly identical tools: a self-report by the patient and corresponding observational report by staff; documents patient's well-being over past 3 days in physical, psychological, and spiritual domains	Validated with good internal reliability, good agreement between patients and staff on many items <sup>18</sup>	May be useful in better determining prospective care for end-of-life patients
Pediatric Pain Questionnaire (PPQ) (Pediatric pain patients >6 years)	Self-report on visual analog scale of present pain, worst pain intensity, and disease severity	Good correlation between PPQ and health care professionals' observations	Easy to administer
Roland-Morris Back Pain Questionnaire (Adults with low back pain)	Self-report, 24-item checklist in which patients are asked which statements apply to them that day; all items have equal weight (1 point) and score is total	Validated and correlates highly with the Oswestry Disability Index <sup>19</sup>	Short, simple, easy to use; each item on the scale begins, "Because of my back pain..."
Support Team Assessment (STA) (Adults in palliative care)	Self-report and corresponding observational report to be completed by family members or health care professionals	Measures prospective outcomes	When observational scales were compared to self-reports, observations by health care professionals were closer to patient self-reports than observations by family members
Verbal Rating Scale (VRS) (Adult and pediatric pain patients)	Self-report by patient to verbal questions of health care professional, asking them to describe their pain using 5 categories (no pain, mild pain, moderate pain, severe pain, unbearable pain)	Correlates tightly to VAS <sup>20</sup>	Measures pain intensity only and is subject to variations depending on how each patient understands "mild," "moderate," and "severe" pain
Visual Analog Scale (VAS) (Adult pain patients)	Self-report by patient who selects a point on a 100-mm line that indicates pain level; in some cases, a percentage may be used (0 = "no pain" and 100% is "worst pain imaginable")	Validated, familiar, and among the most frequently used pain scales in the US	Easy to administer, fast, and easy for patients to understand but measures pain intensity only

"List of Clinically Tested and Validated Pain Scales." *Practical Pain Management, 2014, www.practicalpainmanagement.com/resource-centers/opioid-prescribing-monitoring/list-clinically-tested-validated-pain-scales.*



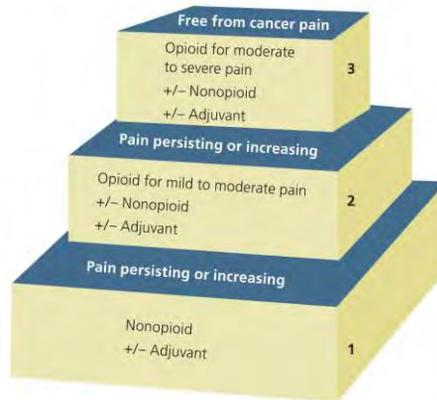
## EVALUATE EFFECTIVENESS OF CURRENT PAIN REGIMEN

- What medication
- Start date
- Dosage and schedule and if taking as directed
- Effectiveness
- Side effects
- Past/present adherence to treatment regimen
- OTC medications, alternative therapies, herbal regimens, supplements, and vitamins
- Nonpharmacological interventions (current and past) including PT, psychotherapy, heat, ice, etc.

Cancer Therapy Advisor. "Palliative Care: Pain Management - Cancer Therapy Advisor." *Cancer Therapy Advisor*, 17 Jan. 2019, [www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/](http://www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/).

## WHO PAIN LADDER

### World Health Organization's Pain Relief Ladder



Blondell, Richard D., et al.

"Pharmacologic Therapy for Acute Pain." *American Family Physician*, vol. 87, no. 11, 2013, pp. 766–72, [www.aafp.org/afp/2013/0601/p766.html](http://www.aafp.org/afp/2013/0601/p766.html).

# GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN

## IMPROVING PRACTICE THROUGH RECOMMENDATIONS

CDC's *Guideline for Prescribing Opioids for Chronic Pain* is intended to improve communication between providers and patients about the risks and benefits of opioid therapy for chronic pain, improve the safety and effectiveness of pain treatment, and reduce the risks associated with long-term opioid therapy, including opioid use disorder and overdose.

The Guideline is not intended for patients who are in active cancer treatment, palliative care, or end-of-life care.

## DETERMINING WHEN TO INITIATE OR CONTINUE OPIOIDS FOR CHRONIC PAIN

- 1 Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for chronic pain. Clinicians should consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, they should be combined with nonpharmacologic therapy and nonopioid pharmacologic therapy, as appropriate.
- 2 Before starting opioid therapy for chronic pain, clinicians should establish treatment goals with all patients, including realistic goals for pain and function, and should consider how opioid therapy will be discontinued if benefits do not outweigh risks. Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.
- 3 Before starting and periodically during opioid therapy, clinicians should discuss with patients known risks and realistic benefits of opioid therapy and patient and clinician responsibilities for managing therapy.

### CLINICAL REMINDERS

- Opioids are not first-line or routine therapy for chronic pain
- Establish and measure goals for pain and function
- Discuss benefits and risks and availability of nonopioid therapies with patient



CDC *Guideline for Prescribing Opioids for Chronic Pain*. 2019, [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html).

## OPIOID SELECTION, DOSAGE, DURATION, FOLLOW-UP, AND DISCONTINUATION

### CLINICAL REMINDERS

- Use immediate-release opioids when starting
  - Start low and go slow
  - When opioids are needed for acute pain, prescribe no more than needed
  - Do not prescribe ER/LA opioids for acute pain
  - Follow-up and re-evaluate risk of harm, reduce dose or taper and discontinue if needed
- 4 When starting opioid therapy for chronic pain, clinicians should prescribe immediate-release opioids instead of extended-release/long-acting (ER/LA) opioids.
  - 5 When opioids are started, clinicians should prescribe the lowest effective dosage. Clinicians should use caution when prescribing opioids at any dosage, should carefully reassess evidence of individual benefits and risks when considering increasing dosage to  $\geq 50$  morphine milligram equivalents (MME)/day, and should avoid increasing dosage to  $\geq 90$  MME/day or carefully justify a decision to titrate dosage to  $\geq 90$  MME/day.
  - 6 Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed.
  - 7 Clinicians should evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Clinicians should evaluate benefits and harms of continued therapy with patients every 3 months or more frequently, if benefits do not outweigh harms of continued opioid therapy, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids.

## ASSESSING RISK AND ADDRESSING HARMS OF OPIOID USE

- 8 Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages ( $\geq 50$  MME/day), or concurrent benzodiazepine use, are present.
- 9 Clinicians should review the patient's history of controlled substance prescriptions using state prescription drug monitoring program (PDMP) data to determine whether the patient is receiving opioid dosages or dangerous combinations that put him or her at high risk for overdose. Clinicians should review PDMP data when starting opioid therapy for chronic pain and periodically during opioid therapy for chronic pain, ranging from every prescription to every 3 months.
- 10 When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs.
- 11 Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible.
- 12 Clinicians should offer or arrange evidence-based treatment (usually medication-assisted treatment with buprenorphine or methadone in combination with behavioral therapies) for patients with opioid use disorder.

### CLINICAL REMINDERS

- Evaluate risk factors for opioid-related harms
- Check PDMP for high dosages and prescriptions from other providers
- Use urine drug testing to identify prescribed substances and undisclosed use
- Avoid concurrent benzodiazepine and opioid prescribing
- Arrange treatment for opioid use disorder if needed



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

LEARN MORE | [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)

## NON-PHARMACOLOGIC OPTIONS

Radiation therapy

Relaxation therapy/mindfulness

Physical Therapy

Occupational Therapy

Transcutaneous Electrical Nerve Stimulation (TENS)

Accupuncture

Massage Therapy

Ice/Heat

## ADJUVANT TREATMENTS

- Antidepressants – helpful in neuropathic pain
  - TCAs
  - SNRIs
- Antiepileptic drugs – helpful in neuropathic pain
  - Gabapentin, pregabalin
- Corticosteroids - helpful when inflammation is the leading cause of pain
  - Bone pain, tissue edema, spinal cord compression, increased ICP
- Bisphosphonates
  - Bone pain, multiple myeloma, breast cancer, osteoporosis with fracture
- Muscle Relaxants
- Anesthetics

Lussier D, Huskey AG et al. Adjuvant Analgesics in Cancer Pain management. *Oncologist* 2004 ;9(5):571-91

## NON-OPIOID PAIN MEDICATIONS

- Acetaminophen
  - Works centrally and has no anti-inflammatory action
  - First pharmacologic step if pain level is mild
  - Often used in conjunction with opiates (hydrocodone, oxycodone)
  - Caution if liver or kidney disease
- NSAIDs (ibuprofen, naproxen, celecoxib, meloxicam, diclofenac, etc.)
  - Anti-inflammatory
  - May help in pain due to bone metastases, musculoskeletal, or skin pain
  - Use limited by potential side effects

Cancer Therapy Advisor. "Palliative Care: Pain Management - Cancer Therapy Advisor." *Cancer Therapy Advisor*, 17 Jan. 2019, [www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/](http://www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/).

## OPIATES

- Weak
  - Codeine
  - Tramadol

Cancer Therapy Advisor. "Palliative Care: Pain Management - Cancer Therapy Advisor." *Cancer Therapy Advisor*, 17 Jan. 2019, [www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/](http://www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/).

## OPIATES

- Strong
  - Morphine
  - Hydrocodone
  - Hydromorphone
  - Oxycodone
  - Oxymorphone
  - Fentanyl
  - Meperidine
  - Methadone

Cancer Therapy Advisor. "Palliative Care: Pain Management - Cancer Therapy Advisor." *Cancer Therapy Advisor*, 17 Jan. 2019, [www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/](http://www.cancertherapyadvisor.com/home/decision-support-in-medicine/hospital-medicine/palliative-care-pain-management/).

## Equianalgesic Opioid Dosing

Drug	Equianalgesic Doses (mg)	
	Parenteral	Oral
Morphine	10	30
Buprenorphine	0.3	0.4 (sl)
Codeine	100	200
Fentanyl	0.1	NA
Hydrocodone	NA	30
Hydromorphone	1.5	7.5
Meperidine	100	300
Oxycodone	10*	20
Oxymorphone	1	10
Tramadol	100*	120

\*Not available in the US.  
 McPherson ML. Demystifying Opioid Conversion Calculations: A Guide For Effective Opioid Dosing. Amer Soc of Health-System Pharms. Bethesda, MD, 2016. Copyright ASHP 2016. Used with permission.  
 NOTE: Learner is STRONGLY encouraged to access original work to review all caveats and explanations pertaining to this chart.

- Opiate equivalency tables
- Numerous versions are available
- Calculators also available
- Limitations
- Keep your patient in mind

## CALCULATING TOTAL DAILY DOSE OF OPIOIDS FOR SAFER DOSAGE

### Higher Dosage, Higher Risk.

Higher dosages of opioids are associated with higher risk of overdose and death—even relatively low dosages (20-50 morphine milligram equivalents (MME) per day) increase risk. Higher dosages haven't been shown to reduce pain over the long term. One randomized trial found no difference in pain or function between a more liberal opioid dose escalation strategy (with average final dosage 52 MME) and maintenance of current dosage (average final dosage 40 MME).



### WHY IS IT IMPORTANT TO CALCULATE THE TOTAL DAILY DOSE OF OPIOIDS?

Patients prescribed higher opioid dosages are at higher risk of overdose death.

In a national sample of Veterans Health Administration (VHA) patients with chronic pain receiving opioids from 2004–2009, patients who died of opioid overdose were prescribed an average of 88 MME/day, while other patients were prescribed an average of 48 MME/day.

Calculating the total daily dose of opioids helps identify patients who may benefit from closer monitoring, reduction or tapering of opioids, prescribing of naloxone, or other measures to reduce risk of overdose.

### HOW MUCH IS 50 OR 90 MME/DAY FOR COMMONLY PRESCRIBED OPIOIDS?

#### 50 MME/day

- 50 mg of hydrocodone (10 tablets of hydrocodone/acetaminophen 5/300)
- 33 mg of oxycodone (~2 tablets of oxycodone sustained-release 15 mg)
- 12 mg of methadone (< 3 tablets of methadone 5 mg)

#### 90 MME/day

- 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
- 60 mg of oxycodone (~2 tablets of oxycodone sustained-release 30 mg)
- ~20 mg of methadone (4 tablets of methadone 5 mg)

CDC Guideline for Prescribing Opioids for Chronic Pain. 2019, [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html).

### HOW SHOULD THE TOTAL DAILY DOSE OF OPIOIDS BE CALCULATED?

- 1 DETERMINE the total daily amount of each opioid the patient takes.
- 2 CONVERT each to MMEs—multiply the dose for each opioid by the conversion factor. (see table)
- 3 ADD them together.



#### Calculating morphine milligram equivalents (MME)

OPIOID (dose in mg/extended interval)	CONVERSION FACTOR
Codeine	0.15
Fentanyl transdermal (in mcg/hr)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone	
1–20 mg/day	4
21–40 mg/day	8
41–60 mg/day	10
> 61–80 mg/day	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3

These dose conversions are estimated and cannot account for all individual differences in genetics and pharmacokinetics.

#### CAUTION:

- Do not use the calculated dose in MMEs to determine dosage for converting one opioid to another—the new opioid should be lower to avoid unintentional overdose caused by incomplete cross-tolerance and individual differences in opioid pharmacokinetics. Consult the medication label.

#### USE EXTRA CAUTION:

- **Methadone:** the conversion factor increases at higher doses
- **Fentanyl:** dosed in mcg/hr instead of mg/day, and absorption is affected by heat and other factors

### HOW SHOULD PROVIDERS USE THE TOTAL DAILY OPIOID DOSE IN CLINICAL PRACTICE?

- Use caution when prescribing opioids at any dosage and prescribe the lowest effective dose.
- Use extra precautions when increasing to ≥50 MME per day\* such as:
  - Monitor and assess pain and function more frequently.
  - Discuss reducing dose or tapering and discontinuing opioids if benefits do not outweigh harms.
  - Consider offering naloxone.
- Avoid or carefully justify increasing dosage to ≥90 MME/day.\*



\* These dosage thresholds are based on overdose risk when opioids are prescribed for pain and should not guide dosing of medication-assisted treatment for opioid use disorder.



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 Center for Disease Control and Prevention

LEARN MORE | [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)

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## COMMON PITFALLS

- Lack of communication
- Unrealistic expectations
- Side effects
  - Constipation
  - Nausea/vomiting
  - Itching
  - Neurotoxicity
  - Hyperalgesia

## IN SUMMARY

- Pain is common in the palliative patient
- Not all pain is the same or should be treated the same
- Know your patient's history and what type of pain they are having
- Tailor your pain regimen to their specific needs
- There is no one right answer for pain management
- Keep taking great care of your patients!

