PAIN MANAGEMENT: OPIOID THERAPY GUIDELINES

PAIN SCALE (0-10 Numeric Pain Intensity Scale)

0 1 2 3 4 5 6 7 8 9 10

0 = no pain 1-3 = mild pain 4-6 = moderate pain 7-9 = severe pain 10 = worst pain possible

Assess pain using the pain scale. Pain is a subjective feeling: ask the patient. If the patient is unable to communicate, assess pain based on behavioral cues. Frequency of assessment: at the time of the initial interview, every eight hours, and prn (at least every hour when pain is moderate to severe).

Starting doses for opioid naive patients:

Mild Pain: *Non-opioids*: acetaminophen 650-1000 mg PO q6h and /or ibuprofen 200-800 mg PO q6h should be tried first. Daily acetaminophen dose should not exceed 4 g/day in the adult, 3 g/day in the elderly, or 2 g/day in those with underlying hepatic dysfunction.

Moderate/ Severe Pain: *Opioid +/- a co-analgesic*. Starting doses are morphine 15-30 mg PO q4h, OXYcodone 10-20 mg PO q4h, HYDROmorphone 4-8 mg PO q4h. Parenteral opioids should be strongly considered; starting doses are: morphine 5-10 mg IV/Subcut. or HYDROmorphone 0.8-1.5 mg IV/Subcut. every 15-30 minutes until the pain is controlled. Co-analgesics such as acetaminophen, NSAID, anticonvulsants, antidepressants, and corticosteroids should be considered.

The cause of the pain must always be properly addressed. These suggestions are for symptom control only and are intended for the average adult. Individual patients might require a different dose or a different treatment approach. Patients who are already taking opioids will require higher doses to control new or worsening pain. When the pain is not expected to resolve shortly, medications should be administered "around the clock" and additional "prn" or "rescue" doses should be available for breakthrough pain. Prescribe the standing medication based on its half-life (3-4 hours for short-acting opioids) and the rescue dose based on the time to onset (15-30 minutes for parenteral and 1 hour for oral).

(5/08) **Palliative Care Service consult pager: (917) 632-6906 or 9399.**

Table 1. Converting the Current Opioid to a Fentanyl Patch:

(1) If the total daily dose (in mg/24h) of the current opioid is:					2. Then replace the current opioid with the Fentanyl Patch at the following dose (q72h):
Morphine IV/Subcut./IM mg/24h	Morphine PO/Rectal mg/24h	OXY-codone PO mg/24h	HYDRO-morphone IV/Subcut./IM mg/24h	HYDRO-morphone PO/Rectal mg/24h	
10-19	30-59	20-39	1-2	8-14	12 mcg/h *
20-44	60-134	40-89	3-6	15-33	25 mcg/h
45-74	135-224	90-149	7-11	34-55	50 mcg/h
75-104	225-314	150-209	12-15	56-78	75 mcg/h
105-134	315-404	210-269	16-20	79-100	100 mcg/h
135-164	405-494	270-329	21-24	101-123	125 mcg/h
165-194	495-584	330-389	25-28	124-145	150 mcg/h
195-224	585-674	390-449	29-33	146-168	175 mcg/h
225-254	675-764	450-509	34-37	169-190	200 mcg/h
255-284	765-854	510-569	38-42	191-213	225 mcg/h
285-314	855-944	570-629	43-46	214-235	250 mcg/h
315-344	945-1034	630-689	47-51	236-258	275 mcg/h
345-374	1035-1124	690-749	52-55	259-280	300 mcg/h
375-404	1125-1214	750-809	56-60	281-303	325 mcg/h
405-434	1215-1304	810-869	61-64	304-325	350 mcg/h
435-464	1305-1394	870-929	65-69	326-348	375 mcg/h
465-494	1395-1484	930-989	70-74	349-370	400 mcg/h

* 12 mcg fentanyl patch is not available on MSH Formulary

Table 2. Converting a Fentanyl Patch to Another Opioid:

(1) If the Fentanyl patch dose (q72h) is :	(2) Then replace the patch(es) with one of the following opioids (total mg/24h): [Note: Divide recommended doses below (in mg/24h) into 6 equal doses given q4h]				
	Morphine IV/Subcut./IM mg/24h	Morphine PO/Rectal mg/24h	OXY-Codone PO mg/24h	HYDRO-morphone IV/Subcut./IM mg/24h	HYDRO-morphone PO/Rectal mg/24h
12 mcg/h	15	45	30	2	11
25 mcg/h	30	90	60	4	22
50 mcg/h	60	180	120	9	45
75 mcg/h	90	270	180	13	67
100 mcg/h	120	360	240	18	90

Fentanyl patches **must not** be prescribed to opioid naive patients. Short-acting opioids should be used to titrate to pain control and then converted to the appropriate fentanyl patch dose.

For conversion between fentanyl patch and fentanyl IV, assume a 1:1 ratio (e.g., a 75 mcg/h fentanyl patch is equivalent to a 75 mcg/h fentanyl IV infusion.).

If converting to or from a fentanyl patch when pain is well controlled, **decrease the dose of the new opioid by 25-50%** to allow for incomplete cross-tolerance. You may need to titrate up rapidly for analgesia in the first 24 hrs. If converting to the fentanyl patch, titrate up with short-acting opioids. If pain is not controlled, you may choose not to decrease the dose.

Since the fentanyl patch takes 3 days to achieve steady state, it is never appropriate to use fentanyl patches to titrate patients with moderate or severe pain.

Although there is technically not a maximum dose, it is usually not practical to prescribe more than four 100 mcg/h patches (400 mcg/h).

PRN dosing for fentanyl patches: The breakthrough dose of oral morphine for a pt. on a fentanyl patch is roughly 1/3 fentanyl patch dose (e.g., if the pt. is prescribed a fentanyl patch 75 mcg/h q72h, the breakthrough dose is short-acting morphine 25 mg PO q1h, prn). As always, when starting an opioid-tolerant patient on a new opioid, you may need to decrease the calculated prn dose by 25- 50% to account for incomplete cross-tolerance.

Do not apply external heat to a fentanyl patch as this can accelerate drug absorption and cause overdose. Do not prescribe fentanyl patches to patients with temperature over 39°C (102°F).

Table 3: Guidelines for Opioids in Kidney and Liver Disease

	Kidney Disease[1]		Liver Disease	
	Renal Failure	Dialysis	Stable Cirrhosis	Severe Disease
Morphine	**Do not use**	**Do not use Not dialyzed**	**Caution ↓ dose ↓frequency***	**Do not use**
OXYcodone	**Caution ↓ dose ↓frequency***	**Caution**	**Caution ↓ dose ↓frequency***	**Caution ↓ dose ↓frequency***
HYDROmorphone	**Preferred ↓ dose ↓frequency***	**Preferred Not dialyzed, but minimal toxicity**	**Caution ↓ dose ↓frequency***	**Caution ↓ dose ↓frequency***
Fentanyl	**Preferred**	**Preferred Not dialyzed, but minimal toxicity**	**Preferred**	**Preferred**
Codeine	**Do not use**	**Do not use**	**Do not use**	**Do not use**
Methadone [2]	**Preferred – with consultation only**	**Preferred – with consultation only. Not dialyzed, but minimal toxicity**	**Preferred – with consultation only**	**Preferred – with consultation only**
* ↓ dose means reduce dose by 25-50%. ↓ frequency means reduce standing orders for short-acting opioids from q4h to q6h.				

[1] Avoid sustained-release oral opioids and fentanyl patches in kidney disease. Note that even the "safest" opioids are not dialyzable.

[2] Consult with an experienced clinician before initiating or adjusting the dose of methadone.

Table 4: Opioid Analgesic Equivalences [1]

Opioid Agonists	IV/Subcut./IM [2] (mg)	PO/Rectal (mg)	Ratio IV to PO IV : PO	Duration of effect
Morphine	**10**	**30**	**1 : 3**	**4 hours**
Long Acting Morphine		**30**		**12 hours**
HYDROcodone (Vicodin,Lortab)		**30**		**4 hours**
OXYcodone		**20**		**4 hours**
Long Acting OXYcodone		**20**		**12 hours**
OXYmorphone (Opana)	**1**	**10**	**1 : 10**	**4 hours**
Long Acting OXYmorphone		**10**		**12 hours**
HYDROmorphone (Dilaudid)	**1.5**	**7.5**	**1 : 5**	**4 hours**
Fentanyl [3]	**0.2 (200mcg)**			**1-2 hours**
Methadone [4]				
Codeine	**130**	**200**	**1 : 1.5**	**4 hours**

[1] If converting between opioids when pain is well controlled, **decrease the dose of the new opioid by 25-50%** to allow for incomplete cross-tolerance. Be prepared to titrate up rapidly for analgesia in the first 24 hrs. If pain is not controlled, you may choose not to decrease the dose.

[2] Intramuscular administration is discouraged because subcutaneous administration is as effective and less painful.

[3] See Tables 1 and 2 for conversions involving fentanyl patches.

[4] Methadone has a complex pharmacokinetic and pharmacodynamic profile that makes equianalgesic dosing particularly difficult. Consult with an experienced clinician before initiating or adjusting the dose of methadone.

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Opioid Titration: For moderate pain, titrate the opioid dose at least every 24 hours. For severe pain, titrate more frequently. Increase the dose by 25-50% for mild to moderate pain, or by 50-100% for moderate to severe pain. Short-acting strong opioids (morphine, HYDROmorphone, and OXYcodone) should be used to control moderate and severe pain. Long-acting preparations (e.g. sustained-release preparations of morphine or OXYcodone or transdermal fentanyl) should be started after the pain is controlled on short-acting opioids. Never use long-acting opioids to control acute pain.

PRN dosing for breakthrough pain (i.e. acute pain in patients with otherwise controlled pain): give short-acting opioids using approximately 10% of the total 24 hour standing opioid dose, available q 1-2 h (e.g., patient on long-acting morphine 60 mg PO q 12h, breakthrough dose = short acting morphine 15 mg PO q1h prn).

Patient Controlled Analgesia (PCA) is a safe and effective method for delivery of opioids for pain that is expected to resolve (e.g., post-operative pain) and for acute exacerbations of chronic pain (e.g., pathologic fracture in a patient with chronic pain from bone metastases). The patient self-delivers fixed doses of opioid by pressing a button. A continuous (basal) infusion may also be ordered. Overdose is very infrequent because the patient must be alert in order to press the button.

Bowel Regimen: Patients on opioid therapy need an individualized bowel regimen prescribed prophylactically at the time of initiation, and continued for the duration of the opioid therapy. Maintain a high index of suspicion for bowel obstruction or fecal impaction. Rule out impaction with digital rectal exam or abdominal x-ray if clinically suspicious. Rectal disimpaction must occur before treating with an oral laxative.

STEP 1: Docusate 100 mg PO tid plus Senna 2 tabs PO at bedtime. (Can titrate up to 8 Senna/day)
STEP 2: Add Lactulose (or Sorbitol) 30 ml PO q24h. (Can titrate up to every 6 hrs)
STEP 3: If constipated for 3 or more days, add Bisacodyl suppository (10 mg q24h), Docusate mini-enema at bedtime (Docusate, PEG, Glycerine), Fleet mineral oil retention enema, or Sodium phosphate oral sol, 30 ml PO. If no results, add a high colonic tap water enema (nursing order).

Opioid Overdose: Naloxone (Narcan) should be used only for life-threatening opioid-induced respiratory depression, an exceedingly rare occurrence in patients on chronic stable opioid doses. In order to minimize symptoms of opioid withdrawal (agitation, fever, emesis, and pain) when naloxone is needed, dilute 1 ampule (0.4 mg) with Normal Saline to a total volume of 10ml (1ml = 0.04 mg) and administer 1 ml IV q 1 min prn. This careful titration will reverse respiratory depression without causing withdrawal. The half-life of naloxone (1 hour) is shorter than the half-life of opioid agonists; therefore additional doses or a continuous infusion of naloxone may be needed.

References:

Fine PG & Portenoy RK (2004). A clinical guide to opioid analgesia. New York: McGraw-Hill.
American Pain Society (2003). Principles of analgesic use in the treatment of acute pain and cancer pain. Glenview, IL.
McCaffery M & Pasero C (1999). Pain: Clinical manual. St. Louis, MO: Mosby.