Opioid PCA Conversion to Oral Opioid Regimen

The following steps are recommended when converting a patient's intravenous PCA opioid regimen to oral opioid therapy:

1. Calculate the patient's previous 24-hour total PCA requirements based on documented total doses received
    a. Can be found documented in the MAR or obtained from patient's PCA pump
    b. Includes all bolus doses received + basal infusion rate (if ordered)
2. Convert total IV opioid dose to oral opioid of choice
3. If converting from one opioid to another, reduce total daily dose by 20-50% to account for incomplete cross-tolerance
4. Divide total oral opioid dose by appropriate dosing frequency
    a. Immediate release formulations: q3-6h prn
    b. Extended release formulations: q8-12h scheduled
        i. Extended release formulations may be needed if transitioning from a continuous infusion PCA or if patient required multiple, frequent administrations of a bolus only PCA

Sample Calcuation

A patient's current hydromorphone PCA settings are as follows: bolus dose 0.2 mg every 8 minutes with NO basal infusion. In the past 24 hours, patient required approximately 1 to 2 boluses per hour, receiving 31 boluses total (6.2 mg IV hydromorphone in 24 hours). The team decides to transition the patient to an oral oxycodone regimen.

- Version 3, Revised: 01/07/21
- Houston Methodist System Pain Committee, Tatjana Ramos, CLINICAL STAFF PHARMACIST
- Replaces PCA Wean Revised

McPherson L. Demystifying Opioid Conversion Calculations: A Guide for Effective Dosing. 2019. ASHP Publications.

STEP 1	*Calculate prior 24 hour requirements* *(Basal infusion rate x 24 hrs, if ordered) + (PCA bolus dose x # times used in past 24 hrs)*	0 basal (24) + 0.2 mg (31) = **6.2 mg IV hydromorphone in 24 hours**
STEP 2a	*Convert total IV opioid dose to oral morphine milligram equivalents*	Per dose conversion chart: *Multiply a conversion factor of 20* **6.2 mg IV hydromorphone x 20 = 124 mg PO morphine**
STEP 2b	*Convert total oral morphine dose to desired oral opioid*	Per dose conversion chart: *Divide by a conversion factor of 1.5* **124 mg PO morphine / 1.5 = 83 mg PO oxycodone**
STEP 3	*Reduce the total dose by 20-50% to account for cross-tolerance*	Reducing by 20-50% yields: **42 mg - 66 mg PO oxycodone**
STEP 4	*Divide 24 hour PO opioid by recommended dosing frequency* *Round dose to nearest tablet or multiple of tablets size*	For extended release + immediate release regimen: **Oxycodone ER (OxyContin®) 20 mg q12h + oxycodone IR 5 mg q4-6h prn** For immediate release regimen only: **Oxycodone IR 10 mg q4-6h prn**

Morphine IV PCA 24 Hour	Hydromorphone IV PCA 24 Hour	Fentanyl IV PCA 24 Hour	Morphine Milligram Equivalent Daily Dose (MEDD)*	Potential Opioid Regimen**
<20 mg	< 3 mg	<200 mcg	60 mg	Hydrocodone/APAP (Norco®) 5-325 mg q4h PRN or Hydrocodone/APAP (Norco®) 7.5-325 mg q4h PRN or Hydrocodone/APAP (Norco®) 10-325 mg q6h PRN
30 mg	4-5 mg	300 mcg	90 mg	Hydrocodone/APAP (Norco®) 7.5-325 mg q4h prn or Hydrocodone/APAP (Norco®) 10-325 mg q4h prn or Hydrocodone/APAP (Norco®) 7.5-325 mg (2 tab) q6h prn or Oxycodone/APAP (Percocet®) 5 mg q4h prn***
40 mg	6 mg	400 mcg	120 mg	Hydrocodone/APAP (Norco®) 10-325 mg q4h prn or Hydrocodone/APAP (Norco®) 10-325 mg (2 tab) q6h prn or Oxycodone/APAP (Percocet®) 10-325 mg q4h prn***
50 mg	7-8 mg	500 mcg	150 mg	Recommend consulting pain management
60 mg	9 mg	600 mcg	180 mg	

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70 mg	10-11 mg	700 mcg	210 mg	
80 mg	12 mg	800 mcg	240 mg	

* Estimated MEDD for hydromorphone IV and fentanyl IV

** Includes 20-50% reduction for incomplete cross-tolerance

*** May consider plain oxycodone (Roxicodone®) if acetaminophen contraindicated.

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