

Pain Management Alternatives when Recommending Discontinuation of Patient-Controlled Analgesia (PCA)

Scenario: Shortage of PCAs requiring minimization of use and discontinuation at 48 hours in most patients; physicians may ask for other treatment options.

PCA Settings	Alternatives to PCA		Comments
	Patient Tolerating Oral Diet/Medications	Patient NPO	
<p>PCA demand only (no basal rate)</p>	<p>PRN oral medication (short-acting)</p> <p>HYDROcodone/APAP (Norco) OxyCODONE IR (Roxicodone) Morphine IR tablets Morphine oral liquid 10 mg/5 mL Morphine oral concentrate (Roxanol) 20 mg/mL HYDROMorphone (Dilaudid) tablets</p>	<p>PRN IV medication</p> <p>Morphine HYDROMorphone</p>	<p>A combination of PRN oral and PRN IV options may be utilized</p>
<p>PCA with a basal rate and demand, acute pain</p> <p><u>Acute pain indicators</u> No opioid home medications: long-acting or around the clock PRN use No indication for chronic pain medications Patient will not be discharged on long-acting pain medications Source of pain is resolving (such as post-op or sickle cell crisis)</p>	<p>If patient's pain regimen can be de-escalated to PRN opioids only see PCA Demand only guidelines above.</p> <p>If the basal rate is needed but this is for acute pain, consider scheduling (check opioid conversion calculations) a short-acting oral agent or IV doses in addition to the PRN doses <i>above</i>.</p> <p>If long-acting opioids are required (mimics the basal rate), see PCA with a basal rate and demand, chronic pain <i>below</i></p>		<p>If long-acting opioids are utilized for acute pain, physician will need a plan to de-escalate from scheduled to PRN therapy to ensure long-acting agent is discontinued when appropriate. Fentanyl patches are for chronic pain in opioid-tolerant patients (see below).</p>
<p>PCA with a basal rate and demand, chronic pain</p> <p><u>Chronic pain indicators</u> Opioid home medications: long-acting or around the clock PRN use Disease state associated with chronic pain Will be discharged on long-acting pain medications Source of pain is not resolving</p>	<p>Long-acting oral opioid (may require overlap with PCA, see below)</p> <p>Morphine ER (MS Contin) OxyCODONE (OxyCONTIN)</p>	<p>Continue PCA and switch to oral once tolerated</p> <p>Or</p> <p>Fentanyl patch** (see below)</p>	<p>Patient will also need a PRN pain medication in addition to a scheduled pain medication</p> <p>Contact clinical specialist if prescriber needs assistance dosing methadone for chronic pain control.</p>

**Fentanyl patch - indicated for the management of pain in opioid-tolerant patients, severe enough to require daily, around-the-clock, long-term opioid treatment and for which alternative treatment options are inadequate. Patients considered opioid-tolerant are those who are taking, for one week or longer, at least 60 mg of morphine, 30 mg of oral oxycodone, or 8 mg of oral hydromorphone daily, or an equianalgesic dose of another opioid. The patch is contraindicated for the treatment of acute or intermittent pain, postoperative pain, or mild pain.

Using an equianalgesic chart from Lexi-Comp:

1. Combine all opioids used in previous 24 hours
2. Convert to desired opioid using the opioid equianalgesic chart in Lexi-comp (all charts may vary)
 - Do not use the chart for methadone and fentanyl patch conversions
3. When rotating from one opioid to another, reduce the final dose by 25-50% to account for incomplete opioid cross-tolerance
 - Example: Hydromorphone PCA to MS Contin
 - Exclusions:
 - Rotating from one formulation to another, no reduction is needed (example: Morphine IV to Morphine PO)
 - Patient in severe pain (10/10) and needs a dose increase – consider giving 100% of calculated dose

Morphine PCA to MS Contin example:

Patient AA has newly diagnosed metastatic pancreatic cancer and presented to the hospital 2 days ago with severe new onset pain. AA was taking Percocet every 4 hours at home with minimal pain relief for two weeks. AA has been on a morphine PCA for 36 hours and will be discharged within 1-2 days. He is comfortable and alert with his current PCA settings with a pain score of 3-4 and is requiring only 1 demand dose every few hours. AA is tolerating a full diet and has good renal and hepatic function. The oncologist has asked for a recommendation for converting AA's morphine PCA with a basal rate to a long-acting opioid.

1. Combine all opioids used in previous 24 hours

Morphine PCA: Basal rate: 2 mg per hour Demand: 1 mg Q 10 min Lockout: 8 mg per hour
The demand amount AA has received is unavailable at your institution, so use the basal amount only.
Basal rate 2 mg IV morphine/hour X 24 hours = 48 mg IV morphine in 24 hours

2. Convert to desired opioid using the opioid equianalgesic chart. Convert to oral morphine. There is no need to reduce the dose to account for incomplete opioid cross-tolerance as this is the same opioid, but just different formulations of morphine.

10 mg IV morphine = 30 mg PO morphine, so 48 mg IV morphine is approximate to 144 mg PO morphine

3. Select dose using available dosing options:

Long acting morphine (MS Contin, Morphine Sulfate Extended Release) is available in 15 mg, 30 mg, 60 mg, 120 mg tablet sizes and is typically dosed BID (sometimes three times daily).

144 mg divided by 2 is 72 mg BID.

Dosing options: A. 60 mg PO BID = 120 mg PO morphine daily B. 75 mg PO BID = 150 mg PO morphine daily (greater pill burden 60 mg +15 mg). Dosing option A is preferable as it is under the calculated amount and AA has a pain score of 3-4. If he experiences additional pain, the PRN agent will assist with breakthrough pain.

4. Add rescue/breakthrough agent of same opioid if possible: 15-25% of opioid total dose given q 4 hours or 10% given q 1-2 hours

18-30 mg: Order oral morphine (MSIR) 15-30 PO Q 4 hours PRN breakthrough pain

HYDROMORPHONE PCA to Fentanyl patch example:

Patient DC has newly diagnosed metastatic gastric cancer and presented to the hospital 2 days ago with severe new onset pain. DC was taking Percocet every 4 hours at home with minimal pain relief for two weeks. AA has been on a HYDROMORPHONE (dilaudid) PCA for 36 hours and will be discharged within 1-2 days. She is comfortable and alert with the current PCA settings with a pain score of 3-4 and is requiring only 1 demand dose every few hours. DC is tolerating a full diet and has average renal and hepatic function. She has experienced ongoing nausea, reflux, and occasional vomiting independent of receiving chemotherapy due to her gastric cancer. The oncologist has asked for a recommendation for converting DC's hydromorphone PCA with a basal rate to a Duragesic patch.

1. Combine all opioids used in previous 24 hours

Dilaudid PCA: Basal rate: 0.4 mg per hour Demand: 0.2 mg Q 10 min Lockout: 1.6 mg per hour

The demand amount DC has received is unavailable at your institution, so you will use the basal amount only.

Basal rate 0.4 mg IV hydromorphone/hour X 24 hours = 9.6 mg IV hydromorphone in 24 hours

2. Convert to desired opioid using the opioid equianalgesic chart in Lexi-Comp.

1.5 mg IV hydromorphone = 30 mg PO morphine, so 9.6 mg IV hydromorphone is approximate to 192 mg PO morphine.

3. Fentanyl transdermal dosing chart: DC has been taking opioids around the clock and greater than 60 mg oral morphine each day, so she is a candidate for a fentanyl 50 mcg patch.

When using the fentanyl transdermal dosing chart, use the morphine conversion table as it can provide a more conservative dosing recommendation for the fentanyl patch. It is not necessary to decrease the morphine dose to account for incomplete opioid cross tolerance as the chart accounts for this already.

Administration guide: Six hours after the fentanyl patch has been applied, the basal rate of the PCA should be cut in half. Twelve hours after the fentanyl patch has been applied, the basal rate on the PCA may be discontinued.