

### Opioid Equivalence Ratio Chart\*

|   |          |   |
|---|----------|---|
| PO MORPHINE 1 mg  | =        | PO HYDROCODONE 1 mg   |
| PO MORPHINE 1½ mg   | =        | PO OXYCODONE 1 mg   |
| PO MORPHINE 4 mg  | =        | PO HYDROMORPHONE 1 mg   |
| PO MORPHINE 3 mg  | =        | IV MORPHINE 1 mg  |
| PO MORPHINE 20 mg   | =        | IV HYDROMORPHONE 1 mg   |
| PO MORPHINE 2 mg/day  | =        | TD FENTANYL 1 mcg/hr  |
| PO HYDROMORPHONE 5 mg   | =        | IV HYDROMORPHONE 1 mg   |
| <b>IV MORPHINE 6½ mg</b>  | <b>=</b> | <b>IV HYDROMORPHONE 1 mg</b>  |
| IV FENTANYL 1 mcg/hr  | =        | TD FENTANYL 1 mcg/hr  |
| PO MORPHINE 3 mg  | =        | PO OXYMORPHONE 1 mg   |
| PO OXYCODONE 2 mg   | =        | PO OXYMORPHONE 1 mg   |
| * All equivalencies are approximate; responses may vary within individual patients.   |          |   |
| * When switching from one agent to another in opioid-tolerant patients, CROSS TOLERANCE IS OFTEN INCOMPLETE. Consider starting with ~ 2/3 of the calculated dose and titrate to effect. |          |   |
| <b>Some common brand names:</b>   |          |   |
| Fentanyl - <i>Duragesic</i>   |          | Morphine - <i>MS Contin, Oramorph SR, Roxanol</i>   |
| Hydrocodone - combined w/APAP in <i>Vicodin, Norco, Lortab, Lorcet</i>  |          | Oxycodone - <i>OxyContin, OxyIR, Roxicodone</i> ; combined w/APAP in <i>Percocet, Tylox</i> |
| Hydromorphone - <i>Dilaudid</i>   |          | Oxymorphone - <i>Opana, Opana ER</i>  |

Table adapted from *Principles of Analgesic Use in the Treatment of Acute Pain and Cancer Pain*, 5th ed., American Pain Society, 2003.

### “Clinical Pearls” for Opioid Prescribing

| FOR:   | REMEMBER:   |
|--|---|
| <b>Acute pain</b>  | Do NOT start with long-acting agents.   |
| <b>Chronic pain</b>  | Prescribe the same opioid in a long-acting form for maintenance, and immediate-release form for breakthrough pain.  |
| <b>Breakthrough oral dosing</b>  | Prescribe ~ 10% of the 24-hour dose, q 4 h prn.   |
| <b>Fentanyl transdermal patches</b>                                    | These are for treating chronic pain in opioid-tolerant patients. They should NOT be used to treat postoperative or other acute pain.  |
| <b>Opioid-naïve elderly patient</b>                                    | “Start low and go slow.”  |
| <b>Switching from one agent to another in opioid-tolerant patients</b> | CROSS TOLERANCE IS OFTEN INCOMPLETE. Consider starting with ~ 2/3 of the calculated dose and titrate to effect.   |
| <b>Treating opioid-induced respiratory depression</b>                  | <ul style="list-style-type: none"> <li>○ Administration of full-dose naloxone can cause a catecholamine surge with cardiovascular sequelae.</li> <li>○ Unless patient is in full respiratory arrest, <b>small incremental doses</b> of naloxone are usually preferred.<br/> <ul style="list-style-type: none"> <li><u>Example:</u> Dilute naloxone 0.4 mg in NS 10 ml total volume; administer 2 ml q 1 min until level of consciousness and respiratory rate are adequate.</li> </ul> </li> <li>○ For <b>infants and children only</b>: naloxone 0.01 mg/kg IV q 2 to 3 min as needed. Max: 0.4 mg per dose for this purpose</li> <li>○ Depending upon opioid drug, dose, and formulation given, patient may require: <ul style="list-style-type: none"> <li>▪ repeated naloxone doses</li> <li>▪ naloxone infusion</li> </ul> </li> </ul> |

## Common Opioid Choices

|                                      | Oral  |                            |                          |                    |                      | Trans-dermal        | IV        | SC | Rectal <sup>a</sup> | Inhaled <sup>b</sup> |
|--------------------------------------|---|----------------------------|--------------------------|--------------------|----------------------|---------------------|-----------|----|---------------------|----------------------|
|                                      | IR Tab (mg)   | SR Tab (mg)                | Liquid                   | Liquid Concentrate | Mucosal <sup>c</sup> | Patch (mcg/hr)      | Injection |    | Suppository (mg)    |                      |
| <b>Morphine</b>                      | 15, 30  | 15, 30, 60, 100, 200       | 10 mg/5 ml<br>20 mg/5 ml | 20 mg/ml           |                      |                     | ✓         | ✓  | 5, 10, 20, 30       | ✓                    |
| <b>Hydromorphone</b>                 | 2, 4, 8   |                            | 5 mg/5 ml                |                    |                      |                     | ✓         | ✓  | 3                   |                      |
| <b>Fentanyl</b>                      |   |                            |                          |                    | X                    | 12, 25, 50, 75, 100 | ✓         | ✓  |                     |                      |
| <b>Oxycodone</b>                     | 5, 10, 15, 20, 30   | 10, 15, 20, 30, 40, 60, 80 |                          | 20 mg/ml           |                      |                     |           |    |                     |                      |
| <b>Hydrocodone/ APAP<sup>d</sup></b> | ✓   |                            | ✓                        |                    |                      |                     |           |    |                     |                      |
| Oxymorphone                          | X   | X                          |                          |                    |                      |                     | X         |    |                     |                      |
| Propoxyphene                         | Pain management experts do not recommend propoxyphene due to low potency and adverse effects. |                            |                          |                    |                      |                     |           |    |                     |                      |

**Bold-font items are on MCHS formulary.**

**Legend:**

- ✓ = available in multiple strengths; on MCHS formulary
- x = commercially marketed, but NOT on MCHS formulary
- IR = immediate-release
- SR = sustained-release

**Footnotes:**

- <sup>a</sup> Table indicates suppository dosage forms. However, sustained-release oxycodone and morphine tablets are sometimes administered rectally as well.
- <sup>b</sup> For inhalation, the injection is diluted in normal saline 3 ml and administered by hand-held nebulizer.
- <sup>c</sup> Two mucosal dosage forms are marketed: lozenges and buccal tablets. Neither is on MCHS formulary.
- <sup>d</sup> Hydrocodone is not marketed in the U.S. as a single-entity product